The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 86, NO. 5 CHICAGO, ILLINOIS JANUARY 30, 1926

SEASICKNESS

P. H. DESNOES, M.D.
Port Medical Officer, United Fruit Company
NEW YORK

This study of seasickness is based on a review of the medical literature on the subject and on personal observation. It also embodies the collective experience of the ships' doctors, who have been in the service for from two to ten years on ten of our passenger steamers of the New York division.

The history of this affliction is of ancient origin. Among the early Greeks it was well known, and they attached great therapeutic value to a moderately severe attack of mal de mer.[1]

The immediate cause of seasickness is the oscillation of the ship about its various axes due to the action of the waves and to the ground swell. To this constant rise and fall, pitch and roll, is added a secondary minor factor, the fine, unremitting tremor and vibration transmitted from the engines throughout the framework and superstructure of the vessel. (In large motor ships the influence of this factor has been much reduced.) In some persons the eyes contribute a third factor, if they are kept for any length of time on the tossing breakers and milk-white foam constantly rushing by the ship.

The manner in which these factors act to produce the symptom complex known as seasickness is not very simple. Many theories and hypotheses have been advanced, among which may be mentioned the labyrinthine theory, "muscle-sense" disturbance, eyestrain, peripheral vagus-nerve irritation, and psychic stimuli.

THE LABYRINTHINE THEORY

Our equilibrium, or balance in space, is maintained by the functioning of a small bilateral group of organs, commonly referred to as the labyrinth, located in the petrous portion of the temporal bone. The labyrinth consists of two tiny cells, called the utricle and the saccule, springing from the walls of which are fine hairs immersed in a mucilaginous medium called endolymph. In this material are suspended minute crystals of calcium carbonate (otoliths). In addition to these two sacs, there are three small, semicircular canals, extending in three spatial directions. These are similarly lined with hair cells and filled with lymph, but they do not contain chalk bodies. The function of the first two (the utricle and the saccule) is to convey sensation of vertical movement, while the latter three semicircular canals register angular movement. The impulses from them are transmitted by the vestibular nerve to the nuclei of Bechterew and Deiters and to the nucleus fastigii in the cerebellum. Through these nuclei, reflex connections are made with the motor centers of the cord, midbrain and cerebellum.[2]

The labyrinthine theory holds that overstimulation of these equilibratory organs causes irradiation, or overflow, of stimuli from their own centers to other contiguous and associated centers, such as the vagus, respiratory and vasomotor, and initiates in these associated centers the objective phenomena seen in their central stimulation; i. e., vomiting, irregular breathing, dizziness, pallor and sweating.[3]

A few experimental facts may be mentioned in support of this theory. Kreidl, working with dogs, was able to induce salivation and vomiting by whirling the animals on a revolving platform. He then sectioned on each side the acoustic nerve, of which the vestibular forms a part, and after the animals recovered from the operation they were entirely immune to any effect of the gyrations of the platform.[3] This would indicate that the area of brain made silent by these nerve sections played some rôle in the production of symptoms.

Fisher,[4] experimenting with human subjects in a Bárány chair, found that continuous revolution was not so provocative of nausea and vomiting as frequent stopping and starting. He asserts that only at those times does the endolymph register movement. Like results were obtained when, by douching the ear with hot or cold water (at a temperature of 20 degrees either above or below normal body temperature), currents were set up in the endolymph at the beginning and the end of each injection. The action of the Bárány chair simulates, to some extent, the motion of a ship at sea, and because of the fact that many of Dr. Fisher's subjects became temporarily immune after many sessions, he advocated immunizing prospective voyagers by use of the revolving chair. To our knowledge, this preventive has not been tried, and its success would be doubtful, as immunity would have to be established for all spatial directions, and might not be retained at the time most needed.

To support the statement that our reaction to oscillatory stimuli is highly selective, one has only to recall the fact that many sailors get seasick on changing from one type of ship to another. During the World War a friend of mine, who had been in the K Squadron of destroyers patrolling the North Sea, and who was considered immune to the worst that Neptune could offer, was made deathly sick by the pitch of a channel steamer.[5]

James [6] noted that congenital deaf mutes were never seasick. Infants and those who have had bilateral disease of the internal ear, with destruction of the laby-

1. Stocker, J. R., in Allbutt's System of Medicine.

2. Howell: Physiology.
3. Prince, Alexander, in Nelson's Encyclopedia, Loose-Leaf System of Medicine.
4. Fisher, Louis: Seasickness and Internal Ear Stimulation, New York M. J. **106**: 542 (Sept. 22) 1917.
5. Robson, H. H.: Personal communication to the author.
6. James: Am. J. Otol., quoted by Stocker (footnote 1).

rinth, are similarly immune. It therefore seems rather well established that seasickness does not occur in those who, as a result of disease, operation or lack of development do not possess a complete and functioning equilibratory apparatus.[5] Birds commonly get seasick, probably because of their very highly developed and sensitive equilibratory organs. Sailors have frequently noted this phenomenon in the case of an albatross perched on a spar, and passengers coming up from the tropics with macaws and parrots often see the symptoms of seasickness in these birds. Monkeys likewise are very susceptible.

"MUSCLE-SENSE" DISTURBANCE

Closely related to the foregoing theory, but probably of minor importance, is disturbance of the so-called muscle sense. Only about half of the fibers in a nerve supplying a skeletal muscle degenerate after section of the posterior roots beyond the ganglions, a fact which shows that muscle is very highly supplied with afferent fibers.[7] These afferent impressions consist of three main classes: (*a*) impressions giving rise to pain, as in muscular cramp (this class does not concern us here); (*b*) impulses causing a rise in blood pressure, and (*c*) impulses which are not associated with a distinct impression in consciousness, but which enables us to localize in space the position of the limbs, head, eyes and other parts of the body. When any one is at sea, the latter impulses are being constantly excited by the continual oscillation of the ship, and confusion results from the impossibility of perfectly coordinating the irregular and unwonted stimuli. In locomotor ataxia, muscle sense is lost through destruction of the posterior cord tracts; it would be interesting to learn whether there is any diminished susceptibility to seasickness among persons with this disease.

EYESTRAIN AS A FACTOR

Eyestrain commonly produces gastric symptoms, with headache and dizziness. Some passengers will overindulge in reading and be careless in shading their eyes from the bright glare reflected from sky and water; others will stand at the rail and watch the swirling waves for long periods. Eye muscle fatigue, with resulting imbalance of the eye muscles, readily follows from so many attempts to fixate on moving objects. This condition, called ocular vertigo, is manifested by horizontal nystagmus, dizziness and headache, and later by reflex nausea and vomiting. A patient seen lately, in whom the chief complaint was vomiting, showed on fluoroscopic examination a persisting spasm of the pylorus, with no demonstrable filling defect or cap deformity; various antispasmodic remedies were used with slight improvement. He had consulted several specialists with temporary relief, but was entirely freed from symptoms after an error of refraction had been corrected; on going without his glasses, his stomach complaint would quickly return. However, eyestrain as a cause of seasickness cannot explain all cases. Blind persons[8] get seasick, and even some passengers who, immediately on boarding a ship, go to bed and thereafter remain in a darkened stateroom, are not immune.

PERIPHERAL VAGUS-NERVE IRRITATION

A fourth theory concerns itself with the manifestations of peripheral vagus-nerve irritation. Owing to the vessel's motion, the freely movable organs of the abdominal cavity, such as the stomach and intestines, make wider excursions than usual, and these with irregular frequency. Succussion-like movements of the stomach contents are set up, and, no doubt, these affect the irritability of the nervous mechanism of that organ. Experimental stimulation of the vagus nerve has been shown to affect the two ends of the stomach differently.[9] Some have observed a relaxation of the cardia, with an increased activity near the pylorus. In this connection may be mentioned the frequent observation that persons of the "vagotonic constitution" are ready victims of seasickness. Eppinger and Hess[10] define vagotonia as an hereditary functional nervous instability characterized by hypertonus of the autonomic nervous system, of which the vagus forms the most important part. They assert that various spastic conditions, such as cardiospasm, bronchospasm (asthma) and spastic constipation, are due to this dysfunction. Nowadays, allergy is blamed for many of these ills. Atropine is advocated as the pharmacologic specific in vagotonia, and this drug, or its close relative, scopolamine, has also been found of service in seasickness.

In contrast to the theorizing of Eppinger and Hess, in favor of the neurogenic control of the smooth muscle of the alimentary tract, must be mentioned the recent observations of Alvarez in his attempt to establish the myogenic control, or the inherent autonomicity of the visceral musculature. This author's gradient theory explains many of the phenomena of reverse peristalsis. It is to the effect that the smooth muscle of the gastro-intestinal tract has an intrinsic and characteristic rhythm rate of contraction, the frequency of which varies in descending ratio from the proximal to the distal end of the alimentary tube. For instance, the contraction rate for a strip of muscle removed from the cardia shows the fastest rate of all; that from the jejunum is about twenty times a minute; from the lower end of the ileum about ten times a minute, while the rate for the colon varies from five to three times a minute. Alvarez has established the fact that an area of irritation somewhere along the gastro-intestinal tract produces a contracted tonic ring from which waves or, rather, disturbances in the before-mentioned rhythmicity, are given off in both directions. An inflammatory focus, such as duodenal ulcer, brings about a distortion of the so-called cap; an ulcer in the colon produces far-reaching changes in the colonic haustrations, and an anal fissure causes a spasm of the sphincters.

An area is said to exist in the jejunum where the vagus-nerve fibers are extremely abundant; this area is so irritable that even psychic stimulation is sufficient to set up in it a zone of hyperexcitability and to produce vomiting and diarrhea, two symptoms that are very commonly associated in severe cases of seasickness.[11] In a patient with jejunal fistula, Alvarez found that unless the feeding was administered very slowly and at the exact body temperature, nausea, vomiting and colic occurred, and the patient's discomfort was relieved only by his being given a little food by mouth just before the regular feedings. This, of course, raised the tone of the upper end of the alimentary tract and nullified the effect of waves ascending from the jejunum. Similarly, in feeding patients according to the Einhorn plan of duodenal intubation, if the food is injected too rapidly nausea and vomiting are likely to occur. Appendicitis commonly causes reverse peristalsis, in all grades, from

7. Stewart: Physiology.
8. Hewitt, Graily, quoted by Stocker (footnote 1).
9. May, quoted by Alvarez: The Mechanics of the Digestive Tract, New York, Paul B. Hoeber, 1922.
10. Eppinger and Hess: Vagotonia, Ed. 2, New York, Nervous and Mental Diseases Publishing Company, 1917.
11. Alvarez, W. A.: The Mechanics of the Digestive Tract, New York, Paul B. Hoeber, 1922.

slight nausea to the vomiting of intestinal contents; likewise, volvulus of the sigmoid produces the most violent degree of peristaltic reverse. Constipation, so frequently observed on shipboard, is mainly a "nervous" phenomenon due to sudden change of environment. The tone of the rectal sphincters is greatly increased, and stagnation is almost always in the rectum. In view of Alvarez' work, irritation from such a source readily reverses the gradient, and the effects vary from slight anorexia to severe vomiting. Therefore, the importance of measures taken to prevent bowel stasis is obvious.

PSYCHIC STIMULI

Psychic impressions play a large part in persons of neurotic disposition. There are some who become nauseated, and even vomit, if they merely go aboard ship for a few minutes to see a friend off. This effect, of course, is suffered only by those who have once been seasick. Others are made quite ill by hearing a roommate retch and vomit, or by listening to tales of similar unpleasant experiences. The smell of food to one who is nauseated is at times sufficient to precipitate an attack. In general, the psychic element is in many persons the strongest element of all, and the most difficult to overcome.

COMMENT

It is my opinion that all the various factors described in the foregoing theories play some rôle in the causation of seasickness. According to the individual susceptibility, some factors are undoubtedly more prominent than others. Labyrinthine overstimulation is probably the most potent factor in the average healthy person. However, the sum total of these effects is to deluge the brain with a bewildering flood of nocuous impressions, and the result is a condition that may be described as psychic shock. The power of inhibition possessed by the cerebral cortex over the subcortical centers plays the most important part in the establishment of immunity. A defensive reaction is set up, as a result of which the threshold values of these harmful stimuli are raised so that either they no longer register in the brain, or their registering is completely ignored. That this function of sensory inhibition of the brain is not unusual is evidenced in many ways. A familiar example is the case of those who dwell in large cities, such as New York, and whose dwellings are contiguous to the tracks of the elevated railroad. The noise of the trains passing almost constantly may be completely unnoticed by them, while it is most disturbing to a visitor. It may be said that the permanent residents are only subconsciously aware of such noises.

CONTRIBUTORY FACTORS

Passengers who embark suffering from any form of gastro-intestinal disturbance, perhaps an overloaded stomach and clogged up intestines, steadily become victims, as well as those who are nervously exhausted and below par from various excesses.[12] The indolent life of many Latin-American women makes them most susceptible, while persons who lead an active, athletic life may be entirely immune. In general, those in the extremes of life (infants or aged persons) suffer least; for the perceptive faculties of the former are immature and undeveloped and of the latter have frequently begun to degenerate. The alert man, in full possession of his faculties, probably suffers the most, but he is correspondingly better able to control and inhibit the disagreeable impressions that he receives from his labyrinth.

12. Belli, C. M.: Personal Hygiene of Aviators, U. S. Navy M. Bull. 17: 39 (July) 1922.

IMMUNITY

Immunity to the effects of a ship's motion under average weather conditions is usually established in a healthy adult after three or four days. The brain has learned to inhibit the peculiar sensations, or possibly to evaluate them better than at first, so that they no longer cause confusion. The passenger is said to have found his "sea legs." It is not a permanent immunity that is developed, but it is one that is more readily acquired on a second voyage than on a first. After many voyages, complete freedom is to be expected; always excepting, of course, slight relapses due to severe weather conditions.

NONIMMUNES

A few unfortunates never get over seasickness. Some sea captains are known to be sick every time they cross the ocean. History affords a famous example in the case of Lord Nelson. In one case known to me, susceptibility to this malady was a definite family trait. This officer's father followed the sea for sixty years and was always subject to mal de mer; his three brothers, who were also seafaring men, were similarly afflicted, one so badly that finally he had to choose another profession.[13]

TABLE 1.—*Incidence of Seasickness in the United Fruit Company's Steamship Service, New York Division*

	Total Number Carried		Total No. of Cases of Seasickness		Per Cent	
Year	Passengers	Crew	Passengers	Crew	Passengers	Crew
1923	30,283	12,689	210	53	0.69	0.41
1922	30,030	14,057	152	41	0.50	0.28
1921	31,085	14,890	127	16	0.40	0.10
1920	36,028	12,869	151	29	0.41	0.22
1919	25,140	9,173	171	62	0.68	0.68
1918	17,650	10,880	124	29	0.70	0.26
1917	29,708	14,913	127	26	0.42	0.17
1916	21,204	12,306	172	51	0.81	0.41
1915	33,968	14,493	155	19	0.45	0.13

In my experience, many conditions have been found responsible for this nonimmunity; among them may be mentioned low grade chronic inflammatory foci in the gastro-intestinal tract (e. g., chronic appendicitis, colitis, diverticulitis, gallbladder disease), anatomic malformations and congenital anomalies (e. g., Lane kinks and Jackson membranes), improperly balanced diets [14] and heredity.

It is strange that many of these persons should uncomplainingly bear this cross without attempting to seek the underlying basis of their weakness. Perhaps they do so because of a subconscious dread of ridicule, for since time immemorial the seasick sufferer has been the butt of gibes and jests. Why it is that his more fortunate fellow men should belittle him for a possibly inherited inferiority of the adaptive mechanism of his brain is puzzling.

The fact is well established that great relief can be given to many of these chronic sufferers by the correction of defects that a thorough general examination, including a roentgen-ray study of the gastro-intestinal tract, may reveal. In some cases, dietary and hygienic regulation have been sufficient.

INCIDENCE

The incidence of seasickness is clearly shown in the accompanying tables.

It must be noted that these represent only the severe cases, which seek medical attention; the majority of light cases do not get into our records at all.

Mortality has been nil in both these series.

13. Livingston, A. D.: Personal communication to the author.
14. Deeks, W. E.: Personal communication to the author.

SYMPTOMATOLOGY

The symptoms of seasickness are too well known to merit detailed description. Suffice it to list the following, which may come on in an ordinary case, from six to thirty-six hours after departure, normal weather conditions prevailing: discomfort in the epigastric region, varying with the rise and fall of the ship; anorexia; salivation, with frequent swallowing movements; headache, dizziness; weakness, progressing to faintness; cold perspiration of the skin, and pallor of the face, with the oft-described greenish hue. The facial expression, which is one of great dejection and apathy, faithfully records the internal feelings. Waves of nausea finally get so strong that the desire to vomit is overwhelming, and after that act is consummated great relief is experienced. The vomiting is very often projectile in character, and there may be little or no nausea preceding. Objectively, one usually finds a strong, slow pulse with increased blood pressure in the early stages, and later a lowered blood pressure with rapid pulse.[15]

TABLE 2.—*Case Incidence and Annual Rate per Thousand for "Nausea Marina" in the United States Navy* *

Year	Number of Cases	Annual Rate per Thousand
1921	44	0.30
1920	30	0.21
1919	352	1.18
1918	509	1.01
1917	91	0.37

* Butler, C. S., in Forchheimer's System of Internal Therapeusis.

As stimulation of the horizontal semicircular canals is the least objectionable, passengers soon learn that the recumbent position is most comfortable. They should select the midship region of the ship, where the motion is minimal, and the weather side of the vessel, as the wind is fresher there and in small ships not so apt to convey an undesirable odor from the galley. Cases that persist in spite of these precautions, and after the application of simple remedial measures, demand careful examination. A slight preexisting cardiac incompetence may be aggravated by the efforts of vomiting and may cause a passive congestion of the abdominal viscera, with deficient oxygenation of those tissues. This has been shown to be productive per se of nausea and vomiting, both experimentally and clinically.[11] Careful questioning and search must be made to rule out chronic inflammatory foci, as well as kidney calculus and other diseases of the urinary tract. In women, diseases of the uterus, tubes and ovaries are very likely to cause prolongation of symptoms, and pregnancy in the early months may be an exciting factor, but is usually not such in the later months. It may be interesting to note here that one writer [1] thinks the likelihood of conception is increased by a voyage in which slight seasickness is experienced. This, we think, is due rather to the exhilarating and tonic effects of the usual sea trip.

COMPLICATIONS

In healthy persons, there are no complications. Patients with gastric or duodenal ulcer or with gallstones may, from excessive vomiting, develop complications of these diseases. Patients suffering from chronic affections of the heart, kidneys and lungs are usually benefited by sea voyages if they do not, in their new environment on shipboard, overstep the limit of their physical endurance.[1] Sidney Jones,[16] surgeon on the *Aquitania*, writes that he has noticed acidosis and acetonemia, especially in pregnant women and in children who had a previous history of cyclic vomiting. This was so frequently noted in all cases, however, that he thinks seasickness may be due to these conditions. He institutes an antiketogenic regimen, and there is immediate improvement in the patient's condition. Our experiences have not been quite similar to his, for we have noted acidosis only late in severe cases. Certain complications of preexisting ailments are said to occur more frequently on shipboard than on land; e. g., delirium tremens in an alcoholic patient, and insanity, particularly a monomania with suicidal tendencies; but these are extremely rare.

TREATMENT

The great majority of passengers can avoid seasickness by adopting, a week or so before sailing, a few rules of hygiene and diet. Abundant sleep must be obtained to place the central nervous system in as good a functioning condition as possible. Exercise in the open air, especially for those who ordinarily spend most of their time indoors, is important to prepare for the fresh and stimulating air of the marine climate, and to tone up the reflexes, both muscular and visceral. Horseback riding and aquatic sports are especially to be recommended. Avoidance of excesses of all kinds is, needless to say, important.[17]

Proper bowel elimination should be achieved by exercise and diet and, if necessary, a laxative dose of sodium phosphate, 2 drachms (8 Gm.) in 6 ounces (180 cc.) of water, should be taken one hour before breakfast. Those who prefer pills may use phenolphthalein, from 1 to 2 grains (0.065 to 0.13 Gm.), or one or two vegetable laxative pills at night, before retiring. Drastic catharsis is not indicated.

The important objects in dieting are to establish a reduced hydrogen ion concentration in the blood and to store up in the system plenty of buffer substances, because of the tendency to acidosis. The salts of meats, cereal and legume foods have an acid reaction; those of sugar, fats and oils are neutral; while the salts of tubers, fleshy roots, leafy, green vegetables and fruits, especially those of the citrous variety, are alkaline. The last group, therefore, must be consumed in sufficient quantity to neutralize the acidity of the first group, and to maintain or, if possible, to increase the alkali reserve of the blood.[18] Sugar, pies, cakes, pastries, candies and other sweets should be strictly avoided, as these remain longest in the stomach and are apt to cause fermentation, with increased acid formation.

After a person embarks, the diet generally should be restricted in amount and should be limited to those articles that appeal most to the appetite. These have been shown to increase the tone of the upper end of the alimentary tract and to favor normal peristalsis. In general, little fluid should be taken at meals, but plenty between meals, such as clear bouillon in the forenoon and weak tea in the afternoon. A laxative pill at night, or soda phosphate in the morning, is usually necessary to secure evacuation daily. Most of the time should be spent on deck, and the mind should be kept actively engaged in some diversion. Deck games are excellent,

15. Cazamain, quoted by Butler, C. S., in Forchheimer's System of Internal Therapeusis.

16. Jones, Sidney: Seasickness, Brit. M. J., Jan. 17, 1925.

17. Belli, C. M.: Personal Hygiene for the Aviator, U. S. Navy M. Bull., September, 1917.

18. Deeks, W. E.: A Brief Review of the Digestive Functions and Food Requirements for the Maintenance of Health, with Particular Reference to the Tropics, Harvard Lecture, Jan. 11, 1923.

and cards may serve the less energetically inclined. A moderate indulgence in alcohol and tobacco, by those accustomed to their use, is not contraindicated.

CASE TYPES

When symptoms of seasickness occur, an attempt should be made to discover which one of the five main factors previously discussed is operating, or, if more than one, which is operative to the greatest extent. The reason why advertised seasickness remedies so often fail is that they are usually directed against only one factor.

Let us suppose the case of a healthy passenger who has taken proper care of the bowels, has eaten moderately, and has become seasick just as the vessel encounters rough weather. Such a case is clearly due to the labyrinthine factor. Drugs of the belladonna group combined with strychnine are strongly recommended by many, under these conditions. Girard [19] advocated the use of atropine, 1/120 grain (0.5 mg.), with strychnine sulphate, 1/60 grain (1 mg.), subcutaneously, at the beginning of a voyage, during rough weather, or on the advent of a storm; this dose to be repeated twice, at hourly intervals, or until incipient dryness of the throat and disturbance of vision indicate its discontinuance. The advantages of the hypodermic method of administration are the certainty of assimilation and the freedom from cumulative action. The pharmacologic action of atropine is to stimulate the cerebral and vital medullary centers; strychnine also aids in this respect, but chiefly counteracts the depressing effect of atropine on the secretory nerve endings in the stomach and the intestinal tract.[20] As the development of immunity to seasickness is shown to be a quality of the brain, agents that tend to improve its circulation and increase its function may logically be presumed to aid in this respect.

In our experience we have secured better results with scopolamine hydrobromide, a close relative of atropine. It is given in small doses and is frequently repeated, in order to discover the idiosyncratic patient before much of the drug has been taken, and to secure maximal sustained effect with the minimal amount of medication. Our routine drug treatment in mild cases of seasickness is 1/400 grain (0.13 mg.) scopolamine hydrobromide, by mouth, every hour until the patient is relieved or until the physiologic effects are obtained. A simple way to give this is one teaspoonful every hour of a mixture containing scopolamine hydrobromide, 1/50 grain (1.3 mg.); spirit of peppermint, 3 minims (0.2 cc.); elixir of lactated pepsin, sufficient to make 1 ounce (30 cc.). In cases with much depression, strychnine sulphate, 1/60 grain (1 mg.), is added to the mixture, and for severer cases with much vomiting scopolamine and strychnine are given by hypodermic injection. As the psychic element enters into nearly every case, a centrally acting hypnotic is usually necessary; for this we use chlorbutanol, from 5 to 10 grains (0.3 to 0.6 Gm.) in capsules, repeated in six hours if necessary. Besides inducing sleep, this remedy has an anesthetic action on the gastric mucosa. A convenient way of dispensing chlorbutanol, together with the previously mentioned drugs, is to place the tablets in the capsule with the chlorbutanol, and all three may be taken together. Other hypnotics that may be used, instead, are barbital from 5 to 15 grains (0.3 to 1 Gm.); barbital sodium, from 5 to 15 grains (0.3 to 1 Gm.); phenobarbital, from ½ to 1½ grains (0.03 to 0.09 Gm.); sulphonethylmethane, from 5 to 10 grains (0.3 to 0.6 Gm.), or sulphonemethane, from 5 to 10 grains (0.3 to 0.6 Gm.).

There are cases of seasickness with intense headache, almost suggesting the postlumbar puncture headache, with slight rigidity of the neck and great disinclination to move. There may be little or no nausea and vomiting. We have been experimenting with pituitary extract in these cases, but have not observed a sufficient number of cases, as yet, to warrant an opinion. The rationale of this treatment is predicated on the assumption of a diminished amount of cerebrospinal fluid, and advantage is taken of the well known action of pituitary extract to increase the rate of production of cerebrospinal fluid, through stimulation of the secretory activity of the choroid plexus. Other observers [21] have used nitroglycerin in the form of spirit of glyceryl trinitrate, 1 minim (0.06 cc.) every hour, on the assumption that there exists an anemia of the brain.

There is another type of seasickness in which the gastro-intestinal tract is the principal disturbing factor. Vagotonic, asthenic and visceroptotic persons, and those suffering from chronic constipation and other low grade, chronic intra-abdominal ailments, are constantly nauseated, have no appetite, and feel weak and apathetic most of the time. On examination, they usually show a heavily coated tongue and other evidences of disturbed digestive function. It is to be noted that in the first type of seasickness discussed, the tongue is usually clean, as the vomiting is of central origin.

The treatment here must be directed first to the alimentary tract. Thorough lavage of the stomach should be effected by making the patient drink large quantities of warm water with sodium bicarbonate, and emesis is produced by tickling the pharynx. A final glass should contain a compound effervescing powder, which the patient must endeavor to retain. Thereafter, there must be absolute rest until the bowels have operated well; a small enema may be necessary to start the bowel action. As the conception of the condition is one of delayed waste material in the bowels, with reflex delay in gastric emptying, our efforts should be directed to prevent this condition. We recommend fluid extract of cascara sagrada in sufficient dosage, three times a day; 1/60 grain (1 mg.) of strychnine, three times a day, and a diet small in bulk and easily assimilated. Such a diet may include milk, toast, ice cream, cereals, boiled eggs, stewed fruit, puréed vegetables and a little chopped chicken or other meat. Rest in a recumbent position for one hour after each meal is very helpful.

Visceroptotic persons are benefited by a supporting belt, possibly more so at sea than ashore. It is chiefly the comfort given this class of persons that has given credence to the advertisements of an elastic belt as a "seasick cure." At sea, the same result may be achieved by applying an adhesive plaster support, according to the directions of Dr. I. H. Levy.[22]

The psychic element is always present in seasickness, and in some neurotic persons it may be the chief factor. Mental diversion is the most valuable remedy; the less these persons think about their symptoms, the better off they are. The simple prophylactic measures previously discussed may be all that is necessary; but usually bromide, as in the following prescription,[23] is indicated: hydrated choral, 1 drachm (4 Gm.); strontium bromide, 5 drachms (20 Gm.); spirit of anise, 15 minims

19. Girard, A. C.: Atropin and Strychnin Combined, A Specific for Seasickness, J. A. M. A. 46: 1925 (June 23) 1906.
20. Bastedo: Pharmacology and Therapeutics.
21. Nolan, H. O.: Personal communication to the author.
22. Levy, I. H., quoted by Kantor: Treatment of the Common Disorders of Digestion, St. Louis, C. V. Mosby Company, 1924.
23. Lockwood, G. R.: Diseases of the Stomach, Philadelphia, Lea and Febiger, 1913.

(1 cc.); chloroform water, sufficient to make 4 ounces (120 cc.). Of this, one teaspoonful is to be taken every four hours.

USE OF COCAINE

Cocaine in seasickness is much advocated by some continental writers, but we do not advise its use, on account of its general poisonous action, the frequency of undesirable idiosyncrasy, the danger of habit formation, and occasional sudden collapse. The packing of the external auditory canals with gauze has been alleged by some to be curative.[24] The good results reported by Lemon for this procedure were chiefly in shell-shocked soldiers returning from overseas. The benefit obtained, we think, is chiefly psychic. The practice of taking a deep inspiration as the ship descends, and of holding it until the vessel again rises, is recommended by Wollaston.[25] It serves the double purpose of regulating voluntarily the rate of respiration, and of steadying the abdominal viscera by the splinting action of the abdominal muscles as the glottis is held closed.

VOMITING IN EXCESS

Cases of excessive vomiting that tax our efforts at control are occasionally encountered. After the usual remedies are tried, including the mustard plaster applied to the epigastrium, from ⅛ to ¼ grain (8 to 16 mg.) of morphine sulphate, administered hypodermically, combined with from $\frac{1}{200}$ to $\frac{1}{150}$ grain (0.3 to 0.4 mg.) of atropine sulphate, is the court of last resort. Provision must be made for the curious fact that the drug most potent in checking vomiting is followed by vomiting as a common after-effect.[26] After the patient awakes from the sleep induced by the drug, he should be directed not to raise his head from the bed for several hours. Iced brandy, champagne or strong coffee, may be given through a drinking tube, but if nausea reasserts itself it is best to continue the administration or morphine, combined with atropine, in progressively descending dosage, using perhaps every four hours half the previous dose. If neither food nor water can be retained in the stomach for twelve hours or so, no time should be lost in resorting to rectal alimentation. The only substances of food value that can be absorbed from the lower intestine are amino-acids, simple sugars and alcohol. The old method of trying to maintain nutrition by the introduction of ordinary foodstuffs through the rectum has been shown to be inefficacious.[27] Skimmed and pancreatinized milk may be used, or the clysma suggested by Smithies:[28] alcohol, 50 per cent, 1 ounce (30 cc.); glucose, 1 ounce (30 cc.); physiologic sodium chloride solution, sufficient to make 8 ounces (240 cc.). Karo corn syrup is a concentrated solution of practically pure glucose and is easily obtainable. This injection should be administered at body temperature by the drop method, with the patient on his back and the hips elevated; it should be repeated two or three times during the day. A bulk of 10 ounces (300 cc.) should not be exceeded. Needless to say, feeding by mouth should be resumed as soon as possible, commencing with such easily digestible articles as milk, bouillon, tea, ice cream and arrowroot crackers.

CONCLUSION

These three kinds of seasickness have been presented as rather distinct and clearly defined types, to emphasize the most appropriate lines of treament, but it must be remembered that they all merge and overlap in varying degrees. As in other illnesses, the most successful results are achieved through earnest work by the physician and interested cooperation from the patient.

The purpose of this article will have been served if it stimulates a more critical spirit of inquiry into the subject of seasickness by the ships' doctors of the various steamship companies, and if it is the means of freeing from one of the terrors of the deep a large number of "those who go down to the sea in ships."

SUMMARY

Seasickness in the healthy adult is usually due to excessive stimulation of the labyrinth. Its effects on the body as a whole are most plausibly explained by radiation of these stimuli from their receptive center in the brain to other associated centers, as the vasomotor, respiratory and vagus. There are several other factors that may enter into the problem. These are eye muscle fatigue, muscle sense disturbance, reflex irritation from the gastro-intestinal tract, and neurotic or psychic reactions in certain types of individuals.

In treatment, the main reliance is placed on scopolamine and strychnine. In addition, we find useful chorbutanol or some other centrally acting sedative hypnotic.

In combating the contributory factors, attention must be given to proper diet and bowel elimination.

24. Butler, C. S.: Forchheimer's System of Internal Therapeusis.
25. Wollaston, quoted by Stocker (footnote 1).
26. Fantus, Bernard: Treatment of Vomiting, J. A. M. A. **81**: 17 (July 7) 1923.
27. Kantor, John: Treatment of the Common Disorders of Digestion.
28. Smithies, Frank: A Treatment of Gastric Ulcer, Based upon Established Clinical, Histopathological and Physiological Facts, Am. J. M. Sc. **153**: 556 (April) 1917.

POLLEN THERAPY WITH PROTEIN-FREE EXTRACTS

J. H. BLACK, M.D.
DALLAS, TEXAS
AND
MARGARET C. MOORE, B.S.
SAN ANTONIO, TEXAS

Grove and Coca [1] called attention to the fact that ragweed pollen extracts may be freed from their protein content and yet remain active, as determined by skin tests on sensitive persons. One of us [2] has reported similar results and shown that, after the removal of all protein, the pollen extract remains quantitatively active, as determined by the instillation of the extract into the nostrils of a sensitive person. It was also shown that the component which acts as the antigen when pollen extracts are used in complement fixation tests is removed by protein digestion and, while the extract is no longer antigenically active, its symptom producing power is undiminished. Evidence was presented that the nitrogen content of extracts does not parallel the activity of the pollen intranasally.

Additional verification of the latter statement may be found in the following: A well known biologic house made extracts of ragweed pollen, using 1 per cent and 5 per cent concentrations, respectively. The source of the pollen and the technic of preparation were identical. When the solution was tested, it was found that the 5 per cent extract contained only three times as much nitrogen as the 1 per cent preparation. These two preparations were referred to us for intranasal testing. The tests showed that the 5 per cent extract, instead of being only three times as active, as was suggested by the relative nitrogen contents, was actually ten times as potent.

1. Grove, Ella F., and Coca, A. F.: Proc. Soc. Exper. Biol. & Med. **21**: 48, 1923.
2. Black, J. H.: J. Lab. & Clin. Med. **10**: 378 (Feb.) 1925.

Based on these results, the conclusion has seemed justifiable that the active substance of pollen is not protein; that standardization by nitrogen content and by complement fixation does not determine the content of the active substance, and that treatment with protein-free extracts should be effective and, at the same time, free of the possible objectionable features of injection of extraneous protein.

In an effort to determine the truth of this conclusion, treatment has been carried on during the past summer with sixty-two ragweed-sensitive persons. Some of these had been treated successfully in the preceding year; some had received no benefit from treatment the preceding year, while the others had had no previous treatment. The treatment was all preseasonal, beginning from six weeks to two months prior to the time the ragweed season was expected to begin. All treatment was discontinued at the onset of the season. Injections were given three times weekly; the increase in dosage was determined by the presence or absence of local and constitutional reactions, and the number of doses used varied, depending on the rapidity with which the dosage could be increased. This technic was identical with that used the preceding year.

The preparation used in treatment was an extract of giant ragweed pollen. The concentration was 2 per cent in a solution composed of two parts of glycerol, and Coca's solution, one part. This extract was made in June, 1924, and was used in the treatment of all ragweed cases of that year. It was stored in the icebox. At the time of its use this year, the preparation was a year old. Its activity, as determined by intranasal instillation, was exactly the same as when tested immediately after its preparation a year before.

In May of this year, the extract was tested to determine whether, after the lapse of eleven months, a reaction for protein could be elicited. The following color reaction tests for proteins were made: biuret, Adamkiewicz, Liebermann, xanthoproteic, and the reduced sulphur reaction. Then picric acid, sodium tungstate and sodium bicarbonate were used as precipitants of protein. All of these were negative, no evidence whatever of protein being found.

This extract, a year old and containing no protein—so far as may be determined by the ordinary qualitative tests—but as active as formerly when instilled intranasally, was used in the treatment of sixty-two ragweed-sensitive persons. Reports have been received at the end of the season which indicate that thirty-eight (61.3 per cent) had perfect freedom from all symptoms; fourteen (22.6 per cent) had occasional mild symptoms but were to all intents and purposes relieved, and ten (16.1 per cent) were little benefited. Eighty-three and nine tenths per cent, then, were practically free from symptoms—a result certainly as good as any we have previously been able to obtain.

The claim is not made that these results were obtained because the extract was protein-free, but it is believed that they substantiate the conviction that protein-free extracts are as potent as those with high protein content and that the amount of protein has nothing to do with the production of tolerance to the active substance of pollen.

CONCLUSION

The results of treatment of ragweed-sensitive persons with a ragweed extract containing no protein justify the statement that the active substance in pollen is not protein in character.

Medical Arts Building.

BACTERIA IN MUSCULAR TISSUES AND BLOOD OF APPARENTLY NORMAL ANIMALS

A PRELIMINARY REPORT *

ALLAN F. REITH
CHICAGO

A number of investigations to determine whether or not bacteria are normally present in the tissues of apparently healthy animals were reported before 1912, principally by German workers, but very few reports on this type of work are recorded in the literature of more recent years. Many early workers [1] thought that the tissues of healthy animals are sterile. Messner,[2] in 1910, found no bacteria in 145 samples of flesh of normal slaughter animals. Zwiek and Weichel,[3] in 1911, examined seventy-seven samples of muscle, liver, spleen and kidney of cattle and hogs. Of eight liver samples, six were positive, and only one muscle sample among fifty-nine tested contained bacteria. All other samples were sterile. In 1912, Grunt [4] found only 2 per cent. of 540 muscle samples to contain bacteria.

TABLE 1.—*Bacteria in Hams of Slaughtered Hogs*

Samples Taken	No. of Hams Examined	No. of Samples	Growths Number	Growths Per Cent.	Anaerobic Growths Number	Anaerobic Growths Per Cent.
Before scalding.....	8	39	36	92	20	51
After scalding, before dehairing	8	39	31	79	20	51
Immediately after dehairing	8	41	28	68	22	54
Immediately after evisceration	11	52	43	83	38	73
After 48 hour chill...	4	20	16	80	14	70
During cure	3	15	13	87	9	60
Total	42	216	167	77	123	57

Other workers have obtained contrary results. Thus Boni,[5] in 1901, examined the lungs of twenty hogs for aerobes and found fourteen positive (70 per cent.); among ten lungs of guinea-pigs, two were positive (20 per cent.). Saski,[6] in 1908, examined eight organs from guinea-pigs and mice and isolated thirty-nine strains of bacteria from them, of which twenty-one were facultative anaerobes, ten strict anaerobes and eight strict aerobes. Conradi,[7] in 1908, examined 162 samples of muscle, liver, kidney, lung, lymph node and spleen from 150 slaughtered cattle and hogs, and found that seventy-two samples were not sterile (40 per cent.). Thirty of these gave anaerobic growth. Wolbach and Saiki,[8] in 1909, recorded the finding of a new anaerobic spore-bearing bacillus in twenty-one of twenty-three livers of healthy dogs. In 1910, Amako [9] found aerobes present in forty-eight samples of eighty-eight (55 per cent.) taken from the muscle, spleen, kidney and liver of cattle, and Bierotte and Machida [10] got a simi-

* From the Department of Hygiene and Bacteriology, University of Chicago.

1. Von Fodor: Arch. f. Hyg. **4**: 1, 1884. Hauser, G.: Arch. f. exper. Path. u. Pharmakol. **20**: 162, 1886. Neisser, M.: Ztschr. f. Hyg. u. Infektionskrankh. **22**: 12, 1896. Opitz, E.: Ibid. **29**: 505, 1898. Selter, H.: Ibid. **54**: 363, 1906.
2. Messner: Tierärztl. Zentralbl. **28**: 31, 1910.
3. Zwick and Weichel: Arb. a. d. k. Gsndhtsamte. **38**: 327, 1911.
4. Grunt, O.: Ztschr. f. Fleisch- u. Milchhyg. **23**: 193, 1912.
5. Boni: Deutsch. Arch. f. klin. Med. **69**: 542, 1901.
6. Saski, S.: Bull. internat. de l'Acad. d. sc. de Cracovie, Classe des scien. math. et natur. **4**: 255, 1907 (in Russian); abstr., Centralbl. f. Bakteriol., 1, Ref. **42**: 587, 1908-1909.
7. Conradi: Ztschr. f. Fleisch- u. Milchhyg. **19**: 341, 1909.
8. Wolbach, S. B., and Saiki, T.: J. M. Res. **21**: 267, 1909.
9. Amako, T.: Ztschr. f. Hyg. u. Infectionskrankh. **66**: 166, 1910.
10. Bierotte, E., and Machida, S.: München. med. Wchnschr. **57**: 636, 1910.

lar percentage of positives (59 per cent. with 11 per cent. anaerobes) from fifty-four samples of the same organs of cattle, sheep and hogs. Bugge and Kiessig,[11] in 1911, examined 241 muscle samples from sixty-six head of freshly slaughtered cattle and found aerobes in thirty-six samples (15 per cent.), and in repeated tests, recorded in 1919,[12] they obtained sixty-four growths from 283 samples (23 per cent.).

We have found no record of similar work on apparently healthy live animals.

The work reported here in a preliminary manner has been carried out in connection with a bacteriologic study of meat spoilage under a fellowship established by Dr. Arthur Lowenstein and in cooperation with the Institute of American Meat Packers. Examinations have been made of samples taken from the muscles of hams at various stages during slaughter, and also from muscles and blood of live hogs, rabbits and guinea-pigs. All hams of the slaughtered hogs were taken directly to the laboratory. The samples were taken from them within one hour after killing. The hams were sectioned at from about 1 to 2 inches below the symphysis pubis, and the whole cut surface of the upper portion was seared with the direct flame of a Bunsen burner. Suitable sample areas were chosen, the seared crust was removed with sterile instruments from these areas and the new fresh surfaces seared in the same manner. Approximately 3 gm. samples of muscle were then excised aseptically from these twice seared areas and were distributed as follows:

1. One gram samples inoculated into beef heart medium.
2. The remainder ground aseptically with 5 c.c. of 0.5 per cent. salt solution and distributed:
   (*a*) A few drops to a blood agar slant.
   (*b*) Five-tenths cubic centimeter to dextrose agar shakes.
   (*c*) The remainder heated at 80 C. for ten minutes, then cultures taken in:
      1. Plain agar slant.
      2. Dextrose agar shakes.

In live animals, the muscle samples were obtained aseptically from the gracilis muscle. Cultures of 1 gm. samples were taken in beef heart medium, and three others in 50 c.c. quantities of broth. The blood was drawn directly from the heart and was distributed in

TABLE 2.—*Bacteria in Muscular Tissues of Healthy Live Animals*

Animal	No.	No. of Samples	Growths: Number	Growths: Per Cent.	Anaerobic Growths: Number	Anaerobic Growths: Per Cent.
Hog	6	36	36	100	20	56
Rabbit	6	36	22	61	13	36
Guinea-pig	6	36	32	89	20	55
Total	18	108	90	83	53	49

1 c.c. quantities to 9, 49, 99 and 299 c.c. quantities of sterile broth containing from 3 to 15 gm. of ground beef heart in each portion of broth. The cultures were incubated at 37 C., and presence or absence of growth was recorded after two, four, seven and fourteen days. The results are summarized in the accompanying tables.

Identification of the micro-organisms found is now in progress. Details of the technic and a discussion of the findings will be published later.

11. Bugge and Kiessig: Ztschr. f. Fleisch- u. Milchhyg. **22**: 69, 1911.
12. Bugge and Kiessig: Ztschr. f. Fleisch- u. Milchhyg. **30**: 17, 34, 53, 1919.

CONCLUSIONS

1. Cultures of the muscular tissues of slaughtered hogs show the presence of bacteria in 77 per cent. of 216 samples examined; 57 per cent. of the samples show the presence of anaerobes.

2. Cultures of the muscular tissues of healthy live hogs, rabbits and guinea-pigs show the presence of bacteria in 83 per cent. of 108 samples examined; 49 per cent. of the samples show the presence of anaerobes.

TABLE 3.—*Bacteria in Blood of Healthy Live Animals*

Animal	No.	No. of Samples	Growths: Number	Growths: Per Cent.	Anaerobic Growths: Number	Anaerobic Growths: Per Cent.
Hog	6	6	6	100	6	100
Rabbit	6	6	4	67	1	17
Guinea-pig	6	6	2	33	1	17
Total	18	18	12	67	8	44

3. Cultures of the blood of healthy live hogs, rabbits and guinea-pigs show the presence of bacteria in 67 per cent. of eighteen samples examined; 44 per cent. of the samples show the presence of anaerobes.

4. It appears justifiable to conclude from our data that bacteria may be isolated with considerable regularity from the blood and muscular tissues of healthy live hogs, rabbits and guinea-pigs as well as from the tissues of slaughtered hogs.

SYMPTOMS ASSOCIATED WITH DUODENAL RETENTION AND REVERSE MOTILITY*

HOMER WHEELON, M.D.
SEATTLE

In a previous communication,[1] it was pointed out that a mass of barium injected into the duodenum was partially divided and passed in opposite directions along that viscus. Similar movements were shown to occur in conditions that permitted the accumulation of barium at any point along the course of the duodenum following the taking of a barium meal. From these observations it was concluded that distention of the duodenum was sufficient stimulus to excite contractions of the musculature about the mass and the subsequent passage of contraction waves in opposite directions along the longitudinal axis of the duodenum. Roentgenographic examinations of the gastro-intestinal tract on a series of 398 consecutive patients over a period of three years corroborate the findings and conclusions previously derived.

Early in the study of duodenal motility, it became apparent that definite symptoms were either directly associated with or immediately followed reverse movements of barium. Identical symptoms were observed as the result of either direct duodenal injections or retention in the duodenum during the period of gastric clearance following the ingestion of a barium meal.

The observations and conclusions here presented are derived from a study of seventy-seven consecutive patients who came to surgery for correction of patho-

* Read before the Medical Staff of the Columbus Hospital, Nov. 12, 1925.

1. Wheelon, Homer: Duodenal Motility: Radiographic Observations Following the Direct Injection of Barium into the Human Duodenum, J. A. M. A. **80**: 615 (March 3) 1923.

logic processes in the abdomen. Roentgenographic results are based entirely on fluoroscopic examinations: Plates gave meager information relative to motility, and served only to record definite anatomic abnormalities. Tracings taken from grease pencil drawings made on the fluoroscopic screen constituted a part of the permanent records. Such drawings must be made rapidly and, consequently, are anatomically incorrect; however, they have the advantage of representing a series of events of which the observer is aware. Observations were made with the patient in the upright position.

The present study is concerned only with retention and reverse motility of the duodenum as observed during the active phase of gastric clearance; hence, no mention will be made of that type of regurgitation of duodenal contents into the stomach which normally occurs during digestive phases. A momentary lag of barium in its passage through the pars descendens of the duodenum, an occurrence usually described as normal, was repeatedly seen in examinations that were otherwise negative. Such occurrences were not associated with subjective symptoms and have not been included in the present series of observations. Retention in the duodenum was considered positive when barium remained for a period longer than that occupied by the complete passage of two gastric peristaltic waves.

Duodenal retention and reverse motility occurred in seventy-four (96.3 per cent) of the seventy-seven patients who came to operation.

SYMPTOMS

Symptoms associated with duodenal retention and reverse motility are of two types, subjective and objective. Subjective symptoms are divided into two groups according to the phraseology used by the patients to express their experiences; first, those of a static nature associated with duodenal retention, and second, those descriptive of motion (kinetic) associated with retention and reverse motility.

Subjective.—A sense of localized fulness or weight (static) was mentioned by twenty-three (29.8 per cent) of the total number of patients. Symptoms associated with duodenal motility (reverse movements of barium) described as pain, nausea, uneasiness, faintness, dragging and swaying sensations (Table 1) were complained of by sixty-four (83.1 per cent) of the total number of patients. Of the sixty-four patients who mentioned subjective symptoms, twenty-three experienced sensations of both types.

Forty-eight (75 per cent) of the sixty-four patients experiencing discomfort during reverse movements of barium expressed their feelings as those of nausea. Subjective symptoms described as pain were mentioned by thirty-seven patients; uneasiness, by fifteen; dragging sensations by thirteen, and faintness by eleven. It is of interest to note that four patients described their distress as a feeling of motion—swaying sensations—a condition that actually was going on in the duodenum.

Definite duodenal involvement was observed in fifty-two (81.2 per cent) of the sixty-four patients mentioning subjective symptoms. In twelve (18.7 per cent) of the patients who complained of subjective symptoms, the duodenum was not pathologically involved. In these twelve patients, duodenal retention and reverse motility were as pronounced as in the fifty-two who had demonstrable duodenal involvement.

No mention was made of subjective symptoms by ten patients who showed marked duodenal retention and reverse motility. It is possible that these ten persons experienced distress of varying degree; however, no voluntary expression was made and at no time were they solicited as to their feelings.

Objective.—Objective symptoms referable to the gastro-intestinal tract (belching, mouth movements, regurgitation and vomiting) associated with duodenal retention and reverse motility occurred in forty-nine (63.6 per cent) of the total number of patients. Belching occurred immediately fellowing the passage of barium toward the stomach in forty-one (53.2 per cent) of the subjects. So marked and common was this occurrence that the assistants would predict the act of belching on observing barium passing toward the stomach. Fourteen patients regurgitated varying amounts of duodenal material into the stomach. In eight patients, vomiting followed the appearance of a rapid to and fro movement of barium in the duodenum. Such movements were invariably associated with nausea. This type of movement was so characteristic that we termed the condition, for the sake of brevity, "duodenal delirium." Mouth movements, such as clamping of the jaws and swallowing movements, were observed in fourteen patients.

Vasomotor symptoms were observed associated with high states of duodenal retention and reverse motility in seventeen (22.1 per cent) of the total number of patients. Pallor occurred in sixteen subjects; marked bradycardia in two, and complete collapse in one. These findings, undoubtedly, are highly inaccurate for the reason that definite observations are difficult to make on more than one organ at a time and that in a dark room. However, mention of faintness by the patient in whom duodenal motility is disturbed has taught the benefits of immediate illumination and a prone position for the patient; incidentally, it has permitted the observations mentioned above.

TABLE 1.—*Occurrence of Symptoms Associated with Duodenal Retention and Reverse Motility in Seventy-Seven Consecutive Operations for Correction of Gastro-Intestinal Disturbance*

	No.	Per Cent	No.	Per Cent of Total
1. Duodenal retention and reverse motility...			74	96.3
A. Associated with duodenal involvement	58	78.3		
B. No duodenal involvement.....	16	21.6		
2. Symptoms:				
A. Subjective			64	83.1
1. Static (distention)			23	29.8
a. Fulness	18	78.3		
b. Weight (localized)	8	34.8		
c. Duodenal pathologic changes	21	91.3		
2. Kinetic (motility)			64	83.1
a. Nausea	48	75.0		
b. Pain	37	57.8		
c. Uneasiness	15	23.4		
d. Dragging	13	20.3		
e. Faintness	11	17.1		
f. Swaying	4	6.2		
g. Explosive	2	3.1		
h. Heat	2	3.1		
i. Gurgling	1	1.5		
j. Pathologic change:				
(a) Positive	52	81.2		
(b) Negative	12	18.7		
(c) Retention	64	100.0		
B. Objective:				
1. Gastro-intestinal			49	63.6
a. Belching	41	83.6		
b. Mouth movements	19	38.7		
c. Regurgitation into stomach.	14	28.5		
d. Vomiting	8	16.3		
2. Vasomotor (pallor, 16; bradycardia, 2; collapse, 1).....			17	22.1
3. Neuromuscular (tetany)			1	1.3

One patient experienced a classic attack of tetany following a series of powerful reverse movements of barium in the duodenum which culminated in vomiting and the typical tetanic convulsions.

Many of the patients complaining of subjective symptoms obtained relief following the act of belching, swallowing movements, duodenal regurgitation into the stomach, vomiting, forced respiratory movements, and the sipping of water. In several instances, persistent belching was quieted by the drinking of water.

Many pathologic processes might be considered as causative factors in the production of duodenal retention and reverse motility and consequently for many of the patients' complaints. The foregoing consideration, however, is concerned only with those symptoms which were observed directly associated with duodenal retention and reverse motility.

PATHOLOGY

This paper is not primarily concerned with the correlation of intra-abdominal disease to retention and reverse motility of the duodenum; however, it is of interest to note, in a general way, the associated pathologic change (organic) encountered at operation. The duodenum was directly involved in fifty-eight (75.3 per cent) of the seventy-four patients showing abnormal duodenal function; the biliary structures in fifty-four; the colon, including the appendix, in forty-two; the jejunum and ileum in seventeen; the female generative organs in thirteen, and the stomach in six. That is, fifty-eight (75.3 per cent) of the series of seventy-seven patients had pathologic changes in the duodenum, while only nineteen (24.7 per cent) had lesions in other structures (Table 2).

COMMENT

According to Alvarez,[2] "Actual reverse transport of material has been observed in those parts of the tract which are accessible to roentgenographic study. More important than visible reverse waves are the reverse impulses that hold back the barium here and there in the tract, in spite of the fact that the muscle is active, and the tube ahead unobstructed." Alvarez further suggested that the underlying etiology of vomiting, regurgitation, pyrosis, belching, nausea, globus, fulness after meals and biliousness "is a reversal of the currents in the tract." In 1925, he[3] obtained graphic waves of reverse peristalsis and was able to show that "vomiting or regurgitation of gastric contents is almost always preceded by an increase in the tone and activity of the small intestine."

In 1921, from observations on a patient who had complete occlusion of the small bowel at the duodenojejunal flexure, I[4] concluded that vomiting is associated with active motility of the duodenum and that periods of nausea preceding the act of vomiting might be looked on as the result of changes in the duodenum preparatory to that act. Later, I[5] observed that the injection of barium into the duodenum of one patient was followed by marked rhythmic to and fro movements, and that on three occasions subsequent to such movements the examination had to be discontinued because of faintness and dizziness of the patient.

Ivy and Vloedman,[5] while studying the small intestine during hunger, observed that "shortly after hunger motility nausea occurred and the balloons were vomited." They further state that they have "observed by use of the fluoroscope and by a change in the tracings that the balloon in the duodenum may be regurgitated into the stomach during a brief attack of nausea without the occurrence of actual vomiting." These authors also observed that distention of a balloon in the duodenum with 50 cc. of air was followed by nausea and a sensation of chilliness. Similar observations were made by Ivy and McIlvain[6] following the introduction of acid or sodium bicarbonate into the duodenum. "When applications were first made to the intestinal loop, defecation and vomiting, sometimes both, sometimes either one or the other, was observed. When the loops were overdistended, vomiting would frequently occur."

Keeton[7] observed that the tip of a Rehfuss tube was returned from the duodenum to the stomach during waves of nausea. He observed further that nausea followed the injection of various solutions directly into the duodenum. Twenty-six of the series of sixty patients studied by him complained of nausea as the result of duodenal stimulation; five complained of dizziness; nine had symptoms referable to the head, and six complained of distress about the neck. Keeton concluded from his study that nausea results from a motor dysfunction of the duodenum, most probably from pathologic antiperistalsis.

Friedman, Strauss and Arens[8] consider, as one of the indirect roentgenographic findings of gallbladder disease, "duodenal stasis manifesting itself by regurgitation to and fro of the barium meal as it passes down the duodenum, not emptying into the jejunum as in the normal, frequently regurgitating back into the bulbus."

According to Jordan,[9] "the distended duodenum of stasis shows vigorous peristalsis, but its contents, instead of passing freely through the four parts of the duodenum into the jejunum (which is the normal process), proceed only to the third or fourth part of the duodenum, and are seen to return again and again to the second part as each contraction wave passes. From time to time a very powerful duodenal wave succeeds in propelling a small amount of material through the kinked duodenojejunal junction. Sometimes the duodenum may be seen to 'writhe' energetically in futile effort to expel its contents into the jejunum. . . . Writhing of the duodenum may be very severe without producing symptoms. Sometimes, however, duodenal writhing is accompanied by epigastric pain which may resemble colic, or be described as a 'gnawing.'" In one case, Jordan observed the duodenum "to writhe vigorously for nine hours, and the patient was in great pain the whole time."

Marked degrees of reverse motility in the duodenum have been observed in patients who were shown at operation not to have organic change of the duodenum. In fact, I have repeatedly observed that patients showing marked duodenal retention and reverse motility had either a normal or shortened period of gastric clearance. Such observations, in the light of statements by Alvarez, necessitate the assumption that "reverse impulses that hold back the barium" are responsible for the accumulation of barium in the duodenum. Consequently, one

2. Alvarez, W. C.: The Syndrome of Mild Reverse Peristalsis, J. A. M. A. **69**: 2018 (Dec. 15) 1917.
3. Alvarez, W. C.: Reverse Peristalsis in the Bowel, a Precursor of Vomiting, J. A. M. A. **85**: 1051 (Oct. 3) 1925.
4. Wheelon, Homer: Observations on Gastric and Duodenal Motility in Duodenal Obstruction, J. A. M. A. **77**: 1404 (Oct. 29) 1921.
5. Ivy, A. C.; Vloedman, D. A., and Keane, J.: The Small Intestine in Hunger, Am. J. Physiol. **72**: 99 (March) 1925.
6. Ivy, A. C., and McIlvain, G. B.: The Excitation of Gastric Secretion by Application of Substances to the Duodenal and Jejunal Mucosa, Am. J. Physiol. **67**: 124 (Dec.) 1923.
7. Keeton, R. W.: Nausea and Related Sensations Elicited by Duodenal Stimulation, Arch. Int. Med. **35**: 687 (June) 1925.
8. Friedman, J. C.; Strauss, A. A., and Arens, R. A.: A Clinical Radiological Study of the Gallbladder, Radiology **5**: 93 (Aug.) 1925.
9. Jordan, A. C.: Chronic Intestinal Stasis, London, Oxford University Press, 1923.

might regard actual reverse transport of barium as the result of an accentuation of the reverse impulses, or consider that waves of reverse motility sufficient actually to carry barium were excited because of distention of the duodenum. A definite answer to such postulates cannot be derived from the present study; however, distention of the duodenum, as shown by the works of others and the present findings, appears to be sufficient to excite reverse motility. Further, distention of the duodenum excites not only reverse movements of barium but also forward conduction; that is, barium may be passed from a given point in opposite directions along the duodenum at the same time.

The results of the present investigation are in complete accord with the statements of Friedman, Strauss and Arens relative to the indirect roentgenographic findings of gallbladder disease. In the present series, fifty-four patients showed a surgical condition of the biliary structures. Of this number forty-eight had hepatoduodenal adhesions; thirty-three, cholecystitis, four with stones; fourteen hepatitis of varying degrees, and one, cancer. In each of the fifty-four patients there was observed at the time of examination such indirect findings as mentioned by Friedman and his associates.

The surgical axiom, Fair, fat and forty female belching gas—gallbladder—operate, finds a rationale for belching, in that thirty-three patients were observed to have this symptom associated with duodenal retention, reverse motility and chronic cholecystitis. Belching associated with reverse motility in the duodenum was observed in a total of forty-one patients, in all of whom the hepatic structures were involved. Indeed, it appears as though the desire to belch is excited by disturbed duodenal motility and that belching with relief is completion of such reverse movements. Because of the relief afforded from epigastric distress by belching, patients often, consciously or unconsciously, swallow air in order to hear themselves relieved of their distress. Further, it appears that nausea, belching and regurgitation are but variations in the degree of factors responsible for the complete fruition of reverse duodenal motility; namely, vomiting.

The present data show that duodenal retention and reverse motility in sick patients are associated with definite duodenal involvement in 75.3 per cent of a series of seventy-four patients showing duodenal dysfunction. Such findings might lead to the hasty conclusion that disturbed duodenal motor function is the direct result of duodenal pathologic changes. However, sixteen patients showing retention and reverse motility were free from demonstrable disease in the duodenum. It therefore follows that retention and reverse motility are not dependent on organic pathologic changes of the duodenum. On the other hand, it does appear that retention in the duodenum from any cause—"reverse impulses that hold back the barium"—but which do not delay the normal emptying time of the stomach, or obstruction from pathologic causes, is sufficient to excite an attempt on the part of the duodenum to free itself of contents. These attempts of clearance which are so frequently associated with subjective symptoms result in the propulsion of materials toward the stomach, regurgitation of duodenal contents into the stomach, belching with relief, and vomiting.

In brief, the observations of Alvarez, Keeton, Ivy and his associates, Jordan, and Wheelon permit of two general conclusions: First, distention of the duodenum and reverse motility are sufficient stimuli to excite subjective symptoms; second, duodenal irritation—distention or retention—results in the appearance of waves which, at times, are associated with marked subjective symptoms and which pass toward the stomach, causing regurgitation or vomiting. The results of the present findings are in agreement with such conclusions.[10]

A definite understanding of the physiology and clinical significance of reverse motility in the duodenum awaits further investigation. That reverse movements in the duodenum serve a definite purpose in the processes of digestion has been amply shown by Spencer, Meyer, Rehfuss and Hawk.[11] The results of too rapid jejunal feeding are of common knowledge. The observations presented in this paper definitely show that reversal of the motility in the duodenum is by no means an uncommon clinical finding. At present we can only state that reverse motility in the duodenum is a normal physiologic occurrence and that symptoms arising from or associated with such processes may be looked on as the result of disturbances of motor functions.

TABLE 2.—*Occurrence of Pathologic Processes in Seventy-Seven Consecutive Operations for Correction of Intra-Abdominal Involvement*

Structures Involved:		No.	Per Cent
1. Duodenum		58	75.3
a. Adhesions and congenital bands	56		
b. Ulcer	11		
c. Obstruction at duodenojejunal flexure	8		
d. Diverticulum	1		
2. Biliary structures		54	70.1
a. Adhesions to duodenum	48		
b. Cholecystitis	33		
c. Hepatitis	14		
3. Colon, including appendix		42	54.5
a. Appendicitis	36		
b. Adhesions	8		
c. Membranes	4		
d. Cancer	1		
4. Jejunum and ileum		17	22.1
5. Female generative organs		13	16.8
6. Stomach		6	8.0
a. Cancer	4		
b. Ulcer	2		
7. Pancreas		1	1.3
8. Spleen		1	1.3

SUMMARY AND CONCLUSIONS

1. Duodenal retention and reverse motility—passage of barium toward the pylorus—were observed roentgenographically in seventy-four of a series of seventy-seven patients who came to surgery for the correction of pathologic changes within the abdomen.

2. Subjective symptoms were complained of by sixty-four (83.1 per cent) of the patients during periods of disturbed duodenal motility.

3. Objective symptoms referable to the gastrointestinal tract occurred in forty-nine (63.6 per cent) of the patients. Belching, which occurred in forty-one patients, mouth movements, duodenal regurgitation and acts of swallowing, were preceded by or associated with reverse movements of barium in the duodenum. Vasomotor and neuromuscular disturbances were also observed, associated with reverse motility in the duodenum.

4. Duodenal involvement was found at operation in fifty-eight (75.3 per cent) of the seventy-four patients

10. Since completion of this paper, W. F. Henderson (J. A. M. A. **88**: 1462 [Nov. 7] 1925) reports that he has observed antiperistalsis in the duodenum in a series of 102 patients with positive stool reports for hookworm ova in ninety-five cases. Henderson is of the opinion that "hookworm infection must be excluded by careful laboratory work before duodenal antiperistalsis can be attributed with safety to other pathologic conditions."

11. Spencer, W. H.; Meyer, G. P.; Rehfuss, M. E., and Hawk, P. B.: Am. J. Physiol. **39**: 459 (Feb.) 1916. Rehfuss, M. E.; Bergeim, Olaf; and Hawk, P. B.: Gastro-Intestinal Studies, I, The Question of the Residuum Found in the Empty Stomach, J. A. M. A. **63**: 11 (July 4) 1914.

who showed duodenal retention and reverse motility. In sixteen patients showing duodenal retention and reverse motility, the duodenum was free from demonstrable pathologic changes.

5. These findings suggest that distention of the duodenum is sufficient stimulus to elicit subjective symptoms and that duodenal distention or retention results in or is followed by the appearance of forces—waves—which pass material toward the stomach and which are often associated with or produce nausea, pain, uneasiness, regurgitation of duodenal contents into the stomach, vasomotor and neuromuscular disturbances, belching and vomiting.

Fifth Floor, American Bank Building.

PNEUMONIA SIMULATING SINUS THROMBOSIS

JEROME F. STRAUSS
CHICAGO

Reminiscent of the somewhat obsolete caution in the diagnosis of surgical appendicitis and its differentiation from a type of lobar pneumonia are the analogous situations arising as a personal experience with disconcerting frequency during the grip epidemic in Chicago, in the spring of 1925. I am well aware that this experience is only that of well marked clinical coincidence, and that in recording these notes nothing unusual in the component parts of the cases cited will be noted. The fact, however, that in each of the instances to be reported the patient was referred to me by men of broad medical experience as serious otologic cases requiring immediate and radical surgery prompts me to publish these abbreviated case histories as a contribution to the differential diagnosis of thrombosis of the lateral sinus, and as the possible prevention of serious error in the choice of procedure when this particular clinical picture is encountered.

During the course of an acute suppurative otitis media, the occurrence of sudden marked febrile excursions cannot fail to cause apprehension in the minds of the general physician and the otologist. When these excursions reach hyperpyrexial elevation within a period of a few hours with equally rapid declines, and recur with almost clocklike regularity, the seriousness of the situation is readily apparent. If, in addition to the foregoing symptom, chills or marked chilly sensations accompany the febrile excursions, followed by profuse sweats and the ominous feeling of well being in the interval which the otologist has learned to dread, one would surmise that the moment for surgical intervention is close at hand. Certainly, with the cardinal symptoms of phlebitis and thrombosis present in the course of an acute aural discharge, exploration of the mastoid cavity and the lateral sinus area presumably cannot be long delayed.

The three following cases and the accompanying fever charts illustrate briefly the precarious situation which may confront the otologist or the general practitioner under ordinary circumstances at a time when prompt radical action may be essential to the life of the patient or the final contributing cause of his demise.

In each of the three instances reported the following similarities may be noted:

1. Initial diagnosis: acute suppurative otitis media (bilateral in Case 1; complication of measles in Case 2).

2. Tenderness over the mastoid process of the involved ears.

3. Hyperpyrexia of the septic type, with speedy elevations to 105 and 106 F., with equally speedy recessions.

4. At least one chill preceding the elevations of temperature in each case, and profuse sweats as the temperature lowered.

5. Rhythmic febrile elevations occurring once each day at approximately the same hour in the individual case.

6. Negative pulmonary findings by percussion and auscultation in the hands of capable and experienced pediatricians.

7. Hospital admission diagnosis of lateral sinus thrombosis, complicating acute otitis media and acute mastoiditis.

8. Hospital discharge diagnosis of central pneumonia, lobar type; acute suppurative otitis media.

REPORT OF CASES

CASE 1.—*History.* M. A., a boy, aged 2½ years, was admitted to the hospital fourteen days after the paracentesis of both drums for acute suppurative otitis media. The child had been acutely ill, with high temperature, pain and vomiting previous to the release of pus, and although there was a profuse and continuous discharge almost immediately, no remission of any of the principal symptoms occurred in the two weeks prior to the hospital admission. The temperature had ranged between 102 and 105.

Examination.—The patient presented a marked septic appearance. The heart, lungs and urine were normal. The white blood cells numbered 18,500; and there were 82 per cent. polymorphonuclears.

Otologic examination revealed a moderate tenderness, on deep pressure, over both mastoids. There was no redness or edema, and no displacement of either auricle. There was a profuse discharge in the canal and the auricle of the right ear, which filled quickly under the eye from a vertical opening in the posterior half of the drum. The membrane was red, edematous, bulging and pulsating. The left ear presented a

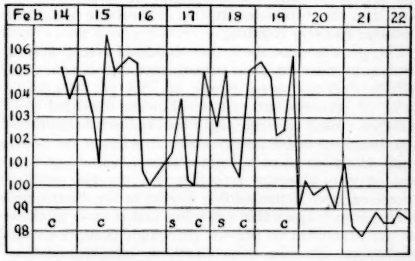


Chart 1.—Temperature range in Case 1: *C*, chill; *S*, slight chill.

very similar picture in this canal, with a definite depression of the posterior superior wall.

Treatment and Course.—A simple mastoid operation was performed on both ears. There was considerable softening and bone destruction, all of which was readily removable by a curet. There was no exposure of the dura or the lateral sinus on either side. After two excursions of marked proportion, the temperature gradually came down to normal on the seventh day, and the patient was shortly discharged from the hospital, with instructions to report for dressings. The discharge was still present in both ears and both mastoid wounds.

Subsequent History.—The child was readmitted to the hospital one week after discharge. He had continued to improve the first four days of his return home, having normal

temperature and a gradually decreasing discharge from both canals and wounds. On the fifth day, he suddenly developed a chill and temperature of 105, which returned to normal in a few hours. He was quite comfortable following this episode, with fair appetite and his usual playfulness, and remained so until the next day when a similar chill and temperature occurred. On the succeeding morning, he was brought to the hospital one hour after the third chill and was admitted with a temperature of 105.2. During the period at home a slight dry throaty cough developed, which was noted by the parents for two or three days.

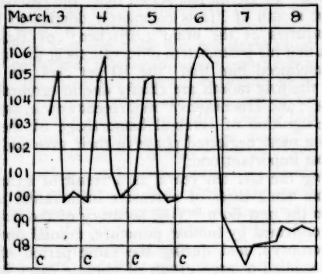


Chart 2.—Temperature range in Case 2.

On admission, a marked increase in the discharge from both ears, particularly the left, was noticed, and the patient frequently called attention to pain in the left ear. The hyperpyrexia was followed by profuse sweats and marked pallor, lasting several hours, after which the patient brightened perceptibly, soon becoming playful and exhibiting hearty appetite. The temperature range is shown in Chart 1.

The white cell count was 32,800, with 86 per cent. polymorphonuclears.

All physical findings were normal. The heart and lungs were normal by auscultation and percussion. The pediatric diagnosis was sinus thrombosis, right or left lateral sinus. Spinal puncture for the Ayer-Tobey test showed increased pressure of spinal fluid, clear, 8 cells per cubic millimeter and a negative Pandy test. Patency of both lateral sinuses was demonstrated by jugular pressure. Roentgen-ray examination of the chest revealed a pathologic area in the lower left lung field, consisting of a cloudiness that appeared to be that of a lobar consolidation.

A roentgenogram made three days later revealed an area of cloudiness in the lower left lung field not quite filling out the bases and extending upward to the lower portion of the upper lobe. The appearance was that of pneumonia.

The lesion was demonstrable by percussion and auscultation twenty-four hours after the first films were taken.

CASE 2.—Three weeks previous to hospital admission, D. S., a boy, aged 8, had had an attack of measles with no unusual symptoms. The temperature had gradually come to normal, and after twenty-four hours of seeming recovery the child complained of severe pain in the left ear. Coincident with this there was an elevation of temperature to 101. An otologist was called, who diagnosed early abscess and advised immediate paracentesis. This was done, with prompt relief to the child and a rapid return to normal temperature. Two days later, there was a febrile rise to 102, without pain, and though there was a slight serous discharge from the ear the aurist, who was again called, recommended a larger opening in the drum. This was done, but without effect on the temperature. On the following day there was a distinct chill, with a sudden febrile rise to 105.2 and with a rapid remission to 99. A similar hyperpyrexial excursion occurred twenty-three hours later, after which I was called in consultation.

Otologic examination revealed a normal right ear. The left canal contained a small amount of seropurulent discharge, and remained dry after sponging. There was a vertical wedge-shaped, linear opening in the posterior superior quadrant of the drum. There was very little edema of the membrane and no bulging, but a slight pulsation was apparent within the limits of the perforation. The patient complained of tenderness on deep pressure over the left mastoid process.

General physical examination by the pediatrician in charge, whose opinions are accepted with confidence, was reported as entirely negative.

The patient was removed to the hospital, and his subsequent temperature range was recorded, as in Chart 2.

Roentgenograms of the chest, taken on the second hospital day, revealed an area of cloudiness in the right lower lung field corresponding in two planes to the anatomic limits of the right lower lobe. The lesion was demonstrable by the stethoscope thirty-six hours after the films were taken.

The patient recovered, as shown on the chart. The diagnosis was central pneumonia, involving the right lower lobe.

CASE 3.—The patient reported in Case 1 was brought back to the hospital three months after his previous discharge. He had been ill for five days. The onset, with severe earache on the left side, fever and marked malaise, was followed in five hours with sudden profuse discharge of thick mucopus. There was gradual but definite improvement in the thirty-six hours following rupture, with freedom from pain and practically normal temperature. During the evening of the second day, the child developed a sudden chilliness. Brought immediately to the hospital, he was admitted with a temperature of 105.4. Chart 3 shows the subsequent temperature course.

The symptoms, therefore, consisted of marked regular temperature elevations to 105 and over, with an acute and freely discharging ear three days after spontaneous rupture. Our previous experience with this patient probably prejudiced us against undue alarm when it was found that the physical findings, except for the acute otitis media, were entirely negative. The patient was observed for three days, during which time the ear condition from a local standpoint behaved in the usual manner. No findings by percussion and auscultation were elicited in repeated examinations of the chest.

On the fourth day the pediatrician was still unable to find any pathologic change in the lungs and reported finally that in his opinion the ear infection was the direct cause of the disturbance. A roentgenogram of the chest was taken, however, and revealed a clouded area in the upper right lung. The lower border of this area was sharply demarcated in accordance with the anatomic limits of the upper lobe. The

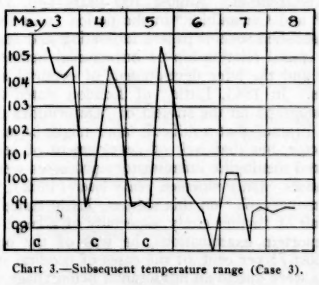


Chart 3.—Subsequent temperature range (Case 3).

diagnosis was central pneumonia, involving the upper right lobe. The lesion was not perceptible with the stethoscope until twenty-four hours before the patient had entirely recovered.

104 South Michigan Avenue.

Tuberculosis of the Hip.—How poor must be the ultimate prospect for a joint when the articulating bones are fashioned by the ravages of tuberculous disease! After destructive tuberculosis, Nature does not always make the best of a bad job; it becomes our privilege to guide or force her hand; and in doing so we should remember that sound fixation is, for a weight-bearing joint, better in the long run than movement between bones ill fitting and imperfectly covered.—Girdlestone.

INTRACRANIAL HEMORRHAGE IN THE NEW-BORN *

WILLIAM SHARPE, M.D.
AND
A. S. MACLAIRE, M.D.
NEW YORK

Two years ago at the meeting of this section, a preliminary report [1] of lumbar puncture tests on 100 consecutive new-born babies within from twelve to twenty-four hours after birth was presented. It was so surprising to find bloody and blood-tinged cerebrospinal fluid in many of these cases that similar tests to confirm or disprove the findings of the first series were performed on a second series of 100 new-born babies, and these observations have been continued until the total series consists of 500 new-born babies on whom a lumbar puncture was performed within from twelve to forty-eight hours after birth; bloody and blood-tinged cerebrospinal fluid was present in forty-five babies, that is, 9 per cent. This frequency of intracranial hemorrhage of varying degree in the new-born of this series suggests the importance of recognizing the clinical signs, if any, of its presence and of the early treatment of the acute condition for fear that a chronic condition of cerebral spastic paralysis and mental retardation may later develop, if the intracranial hemorrhage is not entirely absorbed.

Until recent years, the literature of intracranial hemorrhage in the new-born has been concerned with the extreme cases, either as postmortem studies of extensive intracranial hemorrhage due to laceration of the large sinuses, tentorium, falx, etc., or as clinical observations of the signs of a probable large intracranial lesion or hemorrhage, and the description of methods to increase the coagulability of the blood and in this manner lessen the cerebral damage and its resulting chronic condition of cerebral spastic paralysis with mental retardation. Almost 100 years ago, Denis,[2] Billard [3] and Cruveilhier,[4] in the period from 1826 to 1835, published several papers intimating and suggesting the causal relationship of intracranial hemorrhage at birth and the later development of cerebral spastic paralysis. In 1843, Little [5] of London stated in his first monograph on the subject of "Deformities of the Human Frame" that a difficult labor might be an etiologic factor, but that lack of development of cerebral tissues and meningitic inflammatory processes were the usual causes. Only nineteen years later (1862), in his second monograph [6] on this subject, Little stated that, as a result of further study, especially of a large series of postmortem examinations, he was of the opinion that almost 75 per cent. of the cases of cerebral spastic paralysis were due to an intracranial hemorrhage at the time of birth. In 1885, Sarah McNutt confirmed this opinion by careful pathologic studies. More recently, Beneke [7] in 1910, Pott [8] in 1911, Mayer [9] in 1915, Holland [10] in 1920, and within the last four years Schafer,[11] Schwartz,[12] Saenger,[13] Capon,[14] Barnett [15] and others have contributed valuable postmortem observations, and yet the literature of the clinical observations has been most meager. In this country Green,[16] Brady,[17] Sidbury,[18] Warwick,[19] Rodda,[20] Strachauer,[21] Ehrenfest,[22] Conkey,[23] Huenekens,[24] and Munro and Eustis [25] have all added to the knowledge of the subject during the last decade. Within the last ten months, Schwartz [26] of Berlin has stated that "the pathology of the first month of life is completely dominated by the birth injuries of the brain"; Fischer [27] of Basel has written that his postmortem observations at the institute have convinced him that "the 10 per cent. of deaths during the first month are chiefly due to cerebral birth injuries"; and Huenekens,[28] in a recent article, says that "the recognition of cerebral hemorrhage of the new-born is a most neglected phase in their care and yet it is a most important one."

During the last ten years, as a result of examining fifty-nine acute cases of extensive intracranial hemorrhage in the new-born [29] (the accuracy of the diagnosis being confirmed by lumbar puncture, cranial operation and necropsy), and during the same period of time having studied a large group of chronic cases in children with varying degrees of spastic paralysis and mental retardation, and in whom, in selected cases, the diagnosis of a former intracranial hemorrhage, most probably occurring at the time of birth, was confirmed by operative and postmortem findings,[30] one of us (S) became so impressed with the possible frequency of acute intracranial hemorrhage in the new-born that a lumbar puncture within from twelve to twenty-four hours after birth was advised in a series of 100 consecutive new-born babies as an accurate method of diagnosis in many of these acute cases. It is true that babies having large intracranial hemorrhage frequently did disclose signs of its presence by varying degrees of stupor, respiratory difficulties, refusal to nurse and muscular twitchings even to convulsive seizures, and at necropsy the diagnosis was confirmed (it was considered fortunate that the baby did not survive). In the milder degrees of intracranial hemorrhage of an amount that could be entirely absorbed together with the cerebrospinal fluid by the natural means of absorption alone, the acute signs, if any, of its presence were of such temporary duration, of several days at most, that the child made a permanent

* From the department of neurosurgery, New York Polyclinic Hospital and Post-Graduate Medical School.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

* Because of lack of space, this article is abbreviated here by the omission of illustrations. The complete article will appear in the Transactions of the Section and in the authors' reprints.

1. Sharpe, William: Intracranial Hemorrhage in New-Born, J. A. M. A. **81**: 620-624 (Aug. 25) 1923.
2. Denis, Commercy, 1826.
3. Billard, Paris, 1828.
4. Cruveilhier, Paris, 1829-1835.
5. Little, J. W.: Deformities of the Human Frame, London, 1843.
6. Little, J. W.: On the Influence of the Abnormal Parturition, Difficult Labors, etc., upon the Mental and Physical Condition of the Child, Obst. Tr. **3**: 243, 1862.
7. Beneke: München med. Wchnschr., 1910, p. 2125.
8. Pott: Ztschr. f. Geburtsh. u. Gynäk. **69**, 1911.
9. Mayer, A.: Zentralbl. f. Gynäk., 1915, No. 46.
10. Holland: Tr. Edinburgh Obst. Soc. **40**.
11. Schafer: Ztschr. f. Geburtsh. u. Gynäk. **84**, 1921.
12. Schwartz: München med. Wchnschr., 1922, No. 30.
13. Saenger: Monatschr. f. Geburtsh. u. Gynäk., 1924.
14. Capon, N. B.: J. Obst. & Gynec. Brit. Emp. Col. **29**: No. 4.
15. Barnett, E. J.: Northwest. Med. **21**: 243 (Aug.) 1922.
16. Green: Boston M. & S. J. **170**: 682, 1914.
17. Brady, J. M.: Meningeal Hemorrhage, J. A. M. A. **71**: 347 (Aug. 3) 1918.
18. Sidbury, J. B.: Arch. Pediat. **37**: 545 (Sept.) 1920.
19. Warwick, Margaret: Am. J. M. Sc. **158**: 95 (July) 1919.
20. Rodda, F. C.: Determining Coagulation Time of Blood in New-Born, Am. J. Dis. Child. **19**: 268 (April) 1920.
21. Strachauer, A. C.: Minnesota Med. **3**: 577 (Dec.) 1920.
22. Ehrenfest, Hugo: Birth Injuries of the Child, New York, D. Appleton & Co., p. 39; Causation of Intracranial Hemorrhages in New-Born, Am. J. Dis. Child. **26**: 503 (Dec.) 1923.
23. Conkey, O. F.: Complications of Labor, Cause of Intracranial Hemorrhage, Arch. Pediat. **40**: 239 (April) 1923.
24. Huenekens, E. J.: Care of New-Born in First Weeks of Life, J. A. M. A. **81**: 624 (Aug. 25) 1923.
25. Munro, D., and Eustis, R. S.: Intracranial Hemorrhage in New-Born, Am. J. Dis. Child. **24**: 273 (Oct.) 1922.
26. Schwartz, P.: Deutsch. med. Wchnschr. **50**: 1357 (Oct. 3) 1924.
27. Fischer, B.: Schweiz. med. Wchnschr. **54**: 905 (Oct. 2) 1924.
28. Huenekens, E. J., quoted by Warwick (Footnote 19).
29. Sharpe, William: Brain Injuries, J. A. M. A. **66**: 1536 (May 13) 1916.
30. Sharpe, William: Proc. Am. A. for Feebleminded, 1918.

excellent recovery, and the birth history was quickly forgotten, if indeed anything abnormal at the time of birth had been observed. However, in those cases in which the amount of intracranial hemorrhage was not of sufficient degree to cause death and yet of larger quantity than could be entirely absorbed by the natural means of absorption (through the walls of the supracortical veins chiefly [80 per cent.] sinuses, pacchionian bodies, etc.), the babies only apparently recovered from the acute condition within a period of from two to four weeks and were even considered normal until the seventh month and usually within the first year, when it was noticed that the child was not developing physically at the normal rate as to holding up its head and sitting up, and later was retarded in beginning to walk and to talk. Usually within the latter part of the first year, an increasing spasticity of either one or both legs appeared as part of a hemiplegic or a diplegic condition. It is in the latter chronic conditions of intracranial hemorrhage in the new-born that the etiologic factor of hemorrhage has been frequently overlooked owing to the paucity and even lack of the clinical signs at the time of the acute condition at birth—the cells of the cerebral cortex being only partially developed at the time of birth and thus even large cerebral lesions not being disclosed clinically. Then the later development of a chronic physical and mental impairment in a child apparently normal up to the latter part of the first year has been a most puzzling one, and the present observations have been made in the hope that the acute condition of intracranial hemorrhage in the new-born will be more frequently recognized, so that its appropriate treatment—possibly repeated lumbar punctures of spinal drainage together with the methods of increasing the blood coagulability—may be instituted early, while the blood is in fluid form and not after a period of days, when the hemorrhage that could not be absorbed has coagulated. Thus the permanent presence of a supracortical organization-residue—the future obstruction to free absorption of the cerebrospinal fluid and the underlying cause of the varying degrees of increased intracranial pressure of cerebral edema in these chronic cases of cerebral spastic paralysis, can be prevented.

OBSERVATIONS AND LUMBAR PUNCTURE FINDINGS

First Series.[1]—In the first series of 100 consecutive new-born babies on whom a lumbar puncture was performed within from twelve to twenty-four hours after birth, the cerebrospinal fluid was bloody in four and blood tinged in five, that is, a total of 9 per cent., and under varying degrees of increased pressure (the normal pressure in the new-born, two weeks after birth, being approximately from 3 to 5 mm., as registered by the spinal mercurial manometer). As many as six lumbar punctures of spinal drainage were necessary in one case to obtain clear cerebrospinal fluid under normal pressure. Two of these babies died, and necropsy revealed a large ventricular hemorrhage in one and a mild subarachnoid hemorrhage with extensive cerebral edema in the other. Repeated lumbar punctures of spinal drainage at intervals of twenty-four hours were sufficient to make the cerebrospinal fluid clear and under normal pressure in the remaining seven cases. No instruments had been used in these nine cases; one was a version with breech extraction; in two, the cord was about the neck. Low forceps had been applied in ten cases of this series, but no intracranial hemorrhage had occurred in these particular instrumental deliveries. The cord-Wassermann reaction was negative in each case. Two cases were reported as "jaundiced." One baby, in whom convulsive twitchings developed ten hours after birth, had clear cerebrospinal fluid and the muscular twitchings ceased within six hours after the lumbar puncture, being the result possibly of the cortical irritability of a mild cerebral edema. In eight cases, a dry tap was recorded.

Second Series.[31]—In the second series of 100 consecutive new-born babies, bloody cerebrospinal fluid of varying degree was found in thirteen, that is, in 13 per cent.; nine fluids were bloody, three blood-tinged and one was yellow, containing many red blood cells. There was no mortality in this series. The intracranial pressure in the bloody cases ranged from 4 to 26 mm.; five punctures of spinal drainage were the largest number necessary to obtain clear cerebrospinal fluid under normal pressure. Two of the babies exhibited muscular twitchings of the face, hands and feet, and also cyanosis of the face which disappeared within six hours after the lumbar puncture; marked signs, as stupor, refusal to nurse or convulsions were not present in any of the cases. The labor in these thirteen bloody cases was normal cephalic in six, and prolonged in three, two of which terminated as cephalic presentations and one as a breech; medium forceps were used in two; one was a face presentation, and one was the child of an eclamptic mother. Jaundice was present in one case only. The coagulation time of the blood was normal in all thirteen bloody cases; in one case, clinically diagnosed as hemorrhagic disease of the new-born, there was no intracranial hemorrhage, and in the thirteen cases with bloody cerebrospinal fluid there was not a lengthened coagulation time. Ten babies were of syphilitic mothers, and in only two of them was the cerebrospinal fluid bloody. In six cases, a dry tap was recorded.

Third Series.[32]—In the third series of 100 consecutive new-born babies, bloody cerebrospinal fluid of varying degree was found in ten, that is, 10 per cent.; the fluid was red with blood in four, and straw-colored and yellow with many red blood cells in six. Six was the highest number of lumbar punctures necessary to obtain clear cerebrospinal fluid under normal pressure. There were no deaths in this series. Seven babies, born of syphilitic mothers, all had clear cerebrospinal fluid. Forceps were applied in nine cases; of the two medium applications, in one the cerebrospinal fluid was blood-tinged and in the other bloody; and in the seven low applications, only one baby had free blood in the cerebrospinal fluid. In the one case of version with breech extraction, the cerebrospinal fluid was clear. The intracranial pressure ranged from 3 to 15 mm., and again the anterior fontanel was not a reliable indicator of the intracranial pressure. The blood coagulation time was not lengthened in any of the four bloody cerebrospinal fluids, and in only one of the yellow fluids was it slightly prolonged to ten minutes (the normal clotting time being considered as from five to eight minutes). However, in four cases in which the cerebrospinal fluid was clear, the blood clotting time was from eight and one-half to eleven minutes, so it seemed that the hemorrhagic tendency in the new-born is only of minor importance as an etiologic factor in the production of the intracranial hemorrhage. Four babies, in whom the cerebrospinal fluid was clear within twenty-seven hours after birth, became jaundiced on the second, third, sixth and seventh day, respectively; in two of these babies, the blood coagulation time was four minutes, and in the others, two, ten and eleven minutes respectively. In six cases, a dry tap was recorded.

Fourth Series.[33]—In the fourth series of 100 consecutive new-born babies, the cerebrospinal fluid was bloody in four and straw-colored in three—a total of 7 per cent. One baby having bloody cerebrospinal fluid died, and the necropsy revealed extensive intraventricular, basal, supracortical and spinal hemorrhages. This baby was apparently normal at birth, but lumbar puncture, four hours after birth, revealed bloody cerebrospinal fluid under 10 mm. of pressure; the blood coagulation time was six minutes; fourteen hours after birth, general convulsive seizures occurred, with respiratory difficulty and death. Jaundice was present in four babies, in three of whom the spinal fluid was clear, and in one a golden yellow and slightly turbid, with numerous red blood cells.

31. Sharpe, William; and Maclaire, A. S.: Surg., Gynec. & Obst. **38**: 200-206 (Feb.) 1924.
32. Sharpe, William; and Maclaire, A. S.: Am. J. Obst. & Gynec. **8**: 172 (Aug.) 1924.
33. Sharpe, William; and Maclaire, A. S.: Am. J. Obst. & Gynec. **9**: 452 (April) 1925.

In this last baby, the jaundice appeared on the seventh day, and it is interesting that the fluid from the first lumbar puncture, performed fourteen and one-half hours after birth, was clear, under 6 mm. of pressure, and the blood clotting time was seven minutes; whereas, when jaundiced, the cerebrospinal fluid was yellow with red blood cells under 8 mm. of pressure, and the blood clotting time was only four minutes.

As in the preceding three series of the new-born, neither sex predominated and approximately 50 per cent. were first-born babies. The signs observed in this series before punctures were done were: muscular twitches of the extremities and face, and convulsive twitches in five, in two of whom the cerebrospinal fluid was bloody, but in the other three, clear; poor nursing in one, and in this particular baby, the fluid was yellow with many red blood cells; cyanosis was present in one baby having clear fluid; and normal intraspinal pressure (from 5 to 8 mm. of mercury within forty-eight hours after birth) was present in forty-five cases, one of them having yellow fluid, above normal in thirty-two, six of them having bloody or yellow fluid, and below normal in eight, and in these the fluid was clear. Punctures were not done on seven premature babies. Venous contamination of puncture occurred in two cases, and in five babies the spinal canal could not be tapped, presumably because either of faulty technic or of anatomic variation. In one case the pressure was not recorded. The blood clotting time was normal (from three to eight minutes) in eighty-one, seven of them having hemorrhagic cerebrospinal fluid; prolonged in two (eight and one half and ten minutes, respectively); below normal in one, and not recorded in sixteen (these included the babies not punctured or successfully tapped and the premature babies). The anterior fontanel was flush in thirty-eight and of them four had hemorrhagic fluid; depressed in thirty-nine, of whom three had hemorrhagic fluid, and bulging in fourteen, and in them all the fluid was clear; the status of the fontanel was not recorded in nine. Seven of the nine premature babies were not punctured on account of their low vitality; three of these babies died, and necropsy did not reveal an intracranial hemorrhage. Low forceps were used in ten, of whom one had bloody cerebrospinal fluid; there was prolonged labor in two, one having blood-tinged cerebrospinal fluid. One dry labor, one cesarean section, one frank breech and one induced labor, all had clear fluids. In one case in which there were convulsive seizures due to a mild cerebral edema with no hemorrhage present, four lumbar punctures of spinal drainage were necessary before the increased intracranial pressure was lowered, and the convulsions then ceased. In seven premature babies, puncture was not done. In five cases, a dry tap was recorded.

Fifth Series.[34]—In the fifth series of 100 consecutive newborn babies, the cerebrospinal fluid was bloody and blood-tinged in six cases; that is, in 6 per cent. Forty-four of the children were of the negro race, and this may be a factor

34. Sharpe, William; and Maclaire, A. S.: Surg., Gynec. & Obst., to be published.

TABLE 1.—*Hemorrhage Cases* *

No.	Name and Sex†	Race‡	Date of Birth	Blood Wassermann: Para	Mother	Babe	Character of Labor	Weight: Lb.	Oz.	Signs	Anterior Fontanel	Character of Cerebrospinal Fluid	Intradural Pressure, Mm.	Blood Clotting Time, Min.	Number of Punctures	Miscellaneous
5	C. T. ♂	W	2/ 7/23	v	.....	.....	L. O. A.	..	..	Negative	Tense	Blood tinged	8	5	3	
18	V. B. ♀	W	2/15/23	i	.....	.....	R. O. A.	8	8	Cyanosis; twitches hands and legs; cord around neck	Normal	Bloody	14	4½	4	
22	H. A. ♂	..	2/23/23	iii	.....	.....	R. O. A. prolonged	8	..	Left parietal hematoma	Slightly tense	Slightly bloody	12	7	3	
33	D. B. ♀	C	3/ 3/23	iii	.....	.....	L. O. A. premature 7th month	3	13	Drowsy; nosebleed	Tense	Bloody	16	6	6	Died; hemorrhage into right ventricle; cyst of cerebellum
39	N. B. ♀	C	3/ 6/23	ii	.....	.....	L. O. A.	7	13½	Negative	Relaxed	Straw	10	7	4	
68	R. C. ♀	W	5/ 7/23	iii	.....	.....	L. O. A., dry labor	6	10	Cord around neck 3 or 4 times	Relaxed	Amber with R. B. C.	4	5	4	
75	M. C. ♀	W	5/17/23	i	.....	.....	L. O. A.	8	8	Drowsiness, failed to cry, did not close eyes, no nursing	Tense	Lumbar puncture post mortem	0	...	...	Necropsy; subarachnoid hemorrhage; brain edematous
83	H. C. ♂	W	5/19/23	vii	.....	.....	L. O. A.	7	1	Negative	Flush	Blood tinged	10	5	3	
84	L. L. ♂	C	5/17/23	i	.....	.....	Version with breech extraction	6	7	Drowsy; slight tendency to hold heels rigid	Flush	Bloody	10	5	4	
85	H. W. ♂	C	5/22/23	iv	.....	.....	L. O. A.	7	10	Slight rigidity of neck	Tense	Amber and blood tinged	8	4½	3	
105	F. D. ♂	W	6/19/23	vii	Neg.	Neg.	Normal	8	9	Negative	Slightly bulging	Straw	4	4	3	
111	S. T. H. ♀	C	6/27/23	i	Neg.	Neg.	Prolonged	7	4	Negative	Bulging	Bloody	26	4	5	Dolichocephalic
113	J. C. ♀	W	6/29/23	i	Neg.	Neg.	Normal	5	7½	Negative	Flush	Blood tinged	4	6	3	
120	P. C. ♂	W	7/ 2/23	i	Neg.	Neg.	Premature 7th mo., normal	2	12	Negative	.....	Blood tinged	4	...	2	Lumbar puncture 15 minutes after death; no postmortem of head
127	R. N. ♂	C	7/10/23	i	Neg.	Neg.	Normal	7	1½	Negative	Bulging	Bloody	12	7	3	Urine bloody
129	M. L. ♂	W	7/15/23	xii	Neg.	Neg.	Normal	7	10	Negative	Flush	Blood tinged	4	7	3	
140	N. E. ♂	C	7/23/23	ii	Neg.	Neg.	Prolonged	7	7½	Negative	Flush	Bloody	10	8	7	
150	H. K. ♂	C	8/ 1/23	i	Neg.	Neg.	Normal	7	½	Negative	Flush	Bloody	8	6½	4	
161	P. T. ♂	W	8/ 9/23	i	Neg.	Neg.	Med. forceps	5	6	Forceps marks on head	Flush	Bloody	8	7½	7	Second of twins; fluid not clear
166	A. G. ♂	C	8/11/23	i	Neg.	Neg.	Eclampsia	6	7	Negative	Slight bulging	Bloody	10	5	4	
191	W. B. ♂	C	9/ 7/23	ii	4+	Neg.	Breech	6	6	Twitchings of hands	Flush	Bloody	6	7½	5	Operation should have been performed; incomplete drainage
195	A. B. ♂	W	9/12/23	ii	Neg.	Neg.	Face pres.	8	9½	Twitchings of arms, legs, mouth; face cyanotic	Depressed	Bloody	4	5½	4	Incomplete drainage
200	A. I. ♂	W	9/17/23	i	1+	Neg.	Med. forceps	8	13½	Laceration left malar region	Flush	Bloody	8	4½	6	Jaundice third day

TABLE 1.—*Hemorrhage Cases—Continued*

No.	Name and Sex†	Race‡	Date of Birth	Blood Wassermann: Mother	Blood Wassermann: Babe	Character of Labor	Weight: Lb.	Weight: Oz.	Signs	Anterior Fontanel	Character of Cerebrospinal Fluid	Intradural Pressure, Mm.	Blood Clotting Time, Min.	Number of Punctures	Miscellaneous
202	L. B. ♂	W	9/19/23	i	Neg.	Neg.	Med. forceps	8	5½	Left supranuclear facial paralysis	Flush	Bloody	8	6	5	
204	F. L. ♂	W	9/21/23	i	Neg.	1+	Med. forceps	8	..	Contusion right eye, jaundiced	Flush	Blood tinged	14	5½	4	
205	P. R. ♂	W	9/23/23	i	Neg.	Neg.	Prolonged and low forceps	7	14	Twitches of hands and feet	Depressed	Bloody	15	6½	7	
208	A. D. ♀	C	9/25/23	ii	1+	Neg.	R. O. P.	4	14	Twitches hands, feet; vomits; nurses poorly	Bulging	Bloody	2	4	3	Canal missed 3 times; incomplete drainage
225	H. C. ♀	W	10/12/23	i	Neg.	Neg.	L. O. A.	8	8	Cord twisted	Flush	Yellow (clear)	14	7	3	No red blood cells
251	T. S. ♂	W	11/ 3/23	ii	Neg.	Neg.	Precipitate, L. O. A.	6	8	Negative	Depressed	Yellow (clear)	12	3	3	R. B. C. microscopically, benzidin test positive
253	J. W. ♂	C	11/ 5/23	iii	Neg.	Neg.	L. O. A.	8	6	Negative	Depressed	Yellow (clear)	12	3½	3	R. B. C. present
257	W. C. ♂	W	11/ 8/23	i	Neg.	Neg.	L. O. A.	8	4	Negative	Flush	Amber (clear)	3	5½	4	Many R. B. C.
283	P. A. ♂	W	12/18/23	ii	Neg.	Neg.	L. O. A.	7	6	Convulsions, cyanosis, frothing at mouth, resp. slow, art. resp	Depressed	Yellow (clear)	10	10	3	No R. B. C.
292	A. A. ♀	W	12/26/23	vi	Neg.	Neg.	Precipitate, L. O. A.	7	13	Negative	Depressed	Yellow (turbid)	10	7	5	Many R. B. C.
303	M. S. ♀	C	2/ 4/24	i	Neg.	Neg.	L. O. A.	6	12	Negative	Flush	Faint straw	6	3½	3	
327	E. P. ♂	C	2/26/24	ii	Neg.	Neg.	L. O. A.	6	6	None at birth, 14 hrs. later, convulsion, heart beat after resp. ceased	Flush	Bloody	10	6	2	Post mortem: supracort., basilar ventricular hemorrhage
339	M. Z. ♀	C	3/10/24	i	Neg.	Neg.	Prolonged 2 days, L. O. A.	8	2	Convulsion	Flush	Blood tinged	10	5	3	
341	W. F. ♂	W	3/13/24	iii	4+	4+	Low forceps	9	9	Ecchymosis left ear, ecchymosis left ext. ang. process, caput. L. parietal	Flush	Bloody	10	7	3	
349	E. R. ♂	C	3/23/24	i	Neg.	Neg.	L. O. A.	6	9	Negative	Depressed	Bloody	9	5½	4	
393	R. F. ♂	W	8/23/24	iii	Neg.	Neg.	L. O. A.	7	1	Nursed poorly	Depressed	Yellow (clear)	16	7½	2	No R. B. C.
398	E. H. ♀	C	8/27/23	ii	Neg.	Neg.	R. O. A.	6	6	Negative	Depressed	Amber (turbid)	12	3½	3	R. B. C., many
420	S. W. ♂	W	9/12/24	v	Neg.	Neg.	Premature, 7 months	4	3	Weak cry	Flush	Bloody	16	4	3	Died 9/19/24; post-mortem refused
424	G. B. ♂	W	9/13/24	iii	Neg.	Neg.	Premature	4	1	Negative	Flush	Yellow (clear)	10	5½	3	6 to 8 R. B. C. to a field
439	W. S. ♂	W	9/29/24	v	Neg.	Neg.	Breech extraction	8	11½	Negative	Bulging	Yellow (clear)	4	6	3	R. B. C. (2-3 per field)
440	E. M. ♂	W	9/30/24	i	4+	Neg.	L. O. A.	6	2	Resuscitated in few minutes	Depressed	Bloody	18	3½	4	Transferred to hospital for treatment, Wass. C. S. F. neg.
447	F. D. ♂	W	10/ 6/24	i	Neg.	Neg.	Low forceps	6	15	Negative	Depressed	Bloody	8	5	3	Jaundiced on 3d day
498	A. P. ♂	C	12/ 3/24	i	Neg.	Neg.	L. O. A.	7	4	Negative	Depressed	Blood tinged	6	5½	3	

* Total, forty-five living patients and one, seen at necropsy, in whom puncture was not done before death (forty-six in all).

† In this column, ♂ indicates male; ♀, female.

‡ In this column, W indicates white; C, colored.

in the lower incidence of free blood in the cerebrospinal fluid. Three of the bloody cases were of primiparas. Of the six bloody cases, all were males—five white and one negro; two of them were premature, and one was a breech and the other a low forceps baby. No definite signs of the presence of bloody cerebrospinal fluid were observed, and the condition would have been overlooked if a lumbar puncture had not been performed. The coagulation time of the blood was within normal limits for each of the six cases. The fontanels were bulging in two, flush in three and depressed in one. The intradural pressure was normal in two, above normal in three and below normal in one (a premature baby). Two babies were not tapped on account of their condition of shock, and five died before a lumber puncture could be performed. In nine cases, a dry tap was recorded.

SUMMARY

In summarizing the foregoing series of 500 consecutive new-born babies on whom a lumbar puncture was performed within from twelve to twenty-four hours after birth, it will be noted that in forty-five babies there was disclosed bloody and blood-tinged cerebrospinal fluid; that is, in 9 per cent. of the entire series. One baby dying before a lumbar puncture was performed—the puncture being made fifteen minutes after death—revealed at necropsy an extensive intracranial hemorrhage with bloody spinal fluid; this case, however, has not been included as having bloody cerebrospinal fluid. It must also be remembered that as many as fifty babies, that is, 10 per cent. of the entire series, were not tapped—in thirty-six a dry tap was recorded, and in fourteen the test was not performed, as seven babies were in severe shock and seven premature babies were in poor condition.

In making the test which was described in detail in the preliminary report,[1] if bloody, blood-tinged or yellow and straw colored cerebrospinal fluid was disclosed, then another immediate confirmatory puncture was made one interspace higher—merely to prove or disprove the presence of blood in the first test. In the bloody cases, another test was made within a period of twenty-four hours, and cerebrospinal fluid was drained of an amount not to lower the pressure below the normal from 4 to 6 mm. of mercury; these daily tests were repeated until the fluid became clear and under normal pressure. As many as seven punctures

of drainage were necessary in several cases, and yet the average number was slightly over three.

There have been three deaths in this series of newborn babies on whom a lumbar puncture revealed blood in the cerebrospinal fluid—two in the first hundred and one in the fourth hundred. Postmortem examinations disclosed a large ventricular hemorrhage in the first, extensive supracortical hemorrhage and cerebral edema

Fig. 1.—Extensive supracortical hemorrhage in a new-born baby having convulsive twitches; death fourteen hours after birth; necropsy disclosed supracortical, basal, subtentorial and spinal hemorrhage.

in the second, and large supracortical, basal, subtentorial and spinal hemorrhage in the third baby. Their common signs were stupor and refusal to nurse; convulsive twitches were present in only the third baby.

The clinical signs suggestive of an intracranial lesion have been most meager and were usually apparently lacking. Only seventy-three babies exhibited clinical signs, and their order of frequency was in that both babies had bloody fluid; respiratory difficulties in mild degree, such as slightly irregular and labored breathing in fourteen babies, of whom only two had bloody fluid, and other signs, such as frothing at the mouth in one baby having yellow fluid, a supranuclear facial palsy in one having bloody fluid, and epistaxis in two, of whom one had bloody fluid. That is, in seventy-three cases having clinical signs suggestive of a possible intracranial lesion, only twenty-five had blood in the cerebrospinal fluid and eight were not recorded. The intradural pressure in these seventy-three cases having clinical signs was increased in thirty, normal in twenty-eight and diminished in six. The anterior fontanel was flush in twenty-four, bulging in fifteen and depressed in twenty-five. The blood clotting time was normal in thirty-five, prolonged in six and decreased in ten. The mother's blood Wassermann test was positive in six. From the foregoing observations, the possible signs of an acute intracranial hemorrhage of mild degree at the time of birth are inconstant and apparently in many cases entirely lacking.

In the forty-five babies having blood of varying degree in the cerebrospinal fluid, thirty-three were males and twenty-two were first children; only four were premature babies. The labor was normal left occipito-anterior and right occipito-anterior in twenty-four; prolonged in seven; precipitate in three; low forceps in three, one of which followed a prolonged labor; medium forceps in four; breech extraction in two; version with breech extraction in one, and a face presentation in one. The anterior fontanel was flush in twenty; tense and bulging in eleven, and depressed in fourteen. The cerebrospinal fluid was bloody in twenty-two; blood-tinged in nine, and yellow in four-

TABLE 2.—*Cases With Signs*

Signs	No. of Cases	Mother's Blood Wassermann		Intradural Pressure				Anterior Fontanel				Blood Clotting Time				Character of Spinal Fluid			
		Positive	Negative	Increased	Normal	Diminished	Not Recorded	Flush	Bulging	Depressed	Not Recorded	Normal	Prolonged	Decreased	Not Recorded	Clear	Bloody	Yellow	Not Recorded
Poor nursing	7	0	7	3	2	1	1	0	3	2	2	2	0	4	1	4	1	1	1*
Twitches of hands	15	3	12	5	7	1	2	4	4	4	3	11	0	1	3	8	5	0	2
Twitches of feet	11	2	9	5	3	1	2	2	3	4	2	8	0	1	2	5	4	0	2
Convulsions	2	0	2	2	0	0	0	1	0	1	0	1	1	0	0	0	1	1	0
Cyanosis	9	0	9	2	6	0	1	5	1	3	0	4	2	0	3	6	2	1	0
Drowsiness	4	0	4	3	0	0	1	2	1	0	1	0	0	1	3	2	1	0	1*
Rigidity	2	0	2	2	0	0	0	2	0	0	0	1	0	0	1	0	2	0	0
Epistaxis	2	0	2	1	1	0	0	1	1	0	0	0	0	0	2	1	1	0	0
Weak cry	3	0	3	1	0	2	0	2	0	1	0	2	1	0	0	2	1	0	0
Vomiting	1	0	1	1	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0
Frothing at mouth	1	0	1	1	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0
Respiratory difficulties	14	1	13	4	8	1	1	4	1	8	1	4	1	3	6	11	1	1	1
Failure to cry	1	0	1	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	1*
Left supranuclear facial palsy	1	0	1	0	1	0	0	1	0	0	0	1	0	0	0	0	1	0	0
Total	73	6	67	30	28	6	9	24	15	25	9	35	6	10	22	40	20	5	8

* This child evincing those three signs died before lumbar puncture; postmortem examination revealed subarachnoid hemorrhage and edema of brain.

the following: muscular twitches of the hands and fingers in fifteen, in only five of whom was the cerebrospinal fluid bloody; muscular twitches of the feet and toes in eleven, of whom only four had bloody fluid; prolonged cyanosis in nine, and only in two was blood disclosed in the fluid; poor nursing in seven, of whom two had blood in the fluid; four were unusually drowsy and two of these had blood in the fluid; the presence of rigidity in two cases was very significant, teen. The blood clotting time was within normal limits for each one of the babies having blood in the cerebrospinal fluid, varying from three minutes in one to ten minutes in another baby—the average being five and one-half minutes. The intradural pressure averaged 10 + mm.—the lowest being one at 2 mm., one at 3 mm. and seven at 4 mm., and the highest being one at 26 mm., one at 18 mm., two at 16 mm., one at 15 mm. and three at 14 mm.

Seventeen babies became jaundiced, in only two of whom was the cerebrospinal fluid bloody and under 8 mm. and 14 mm. of pressure, respectively; the blood clotting time was four and one-half and five and one-half minutes, respectively; five and three lumbar punctures of spinal drainage were necessary to obtain clear cerebrospinal fluid.

The Wassermann test was positive in both mother and child (4 plus) in only one case in which there was free blood in the cerebrospinal fluid; it was 4 plus in two mothers but negative in their babies, and 1 plus in two mothers but negative in their babies, and 1 plus in one baby but negative in the mother.

As noted above, the blood clotting time has been within normal limits for each baby having free blood in the cerebrospinal fluid, and it has been prolonged to nurse and from muscular twitches to general convulsive twitches.

3. First born, full-term males having difficult prolonged labors are more liable to this complication, forceps being used as a last resort rather than their early application; medium forceps and breech extraction.

4. Hemorrhagic disease of the new-born is not a common etiologic factor, at least in this series of cases, in which puncture was done and tests were made within from twenty-four to forty-eight hours after birth.

5. Lumbar puncture as an early diagnostic method when the hemorrhage is still in fluid form, and as a therapeutic means of spinal and cranial drainage, is a simple and safe procedure in the absence of severe shock.

TABLE 3.—*Jaundice Cases*

No.	Name and Sex	Race	Date of Birth	Para	Blood Wassermann: Mother	Blood Wassermann: Babe	Character of Labor	Weight: Lb.	Weight: Oz.	Signs	Anterior Fontanel	Character of Cerebrospinal Fluid	Intradural Pressure, Mm.	Blood Clotting Time, Min.	Number of Punctures	Miscellaneous
93	J. L. ♂	W	6/ 1/23	ii	Neg.	Neg.	L. O. A.	8	..	Jaundice	Relaxed	Clear	6	...	1	
95	M. P. ♀	W	6/ 3/23	i	Neg.	Neg.	Prolonged L. O. A.	6	13	Head small; jaundice	Closed	Clear	5	...	1	
154	T. J. ♂	W	8/ 6/23	i	Neg.	Neg.	Low forceps	7	8	Jaundice	Flush	Clear	4	7	1	Head not opened; died 8/10/23, postmortem negative
200	A. I. ♂	W	9/17/23	i	1+	Neg.	Med. forceps	8	13½	Laceration, left malar region	Flush	Bloody	8	4½	5	Jaundice 3d day
201	G. D. ♀	W	9/18/23	v	Neg.	Neg.	Normal	5	9½	Nursed poorly, C. S. F. neg. bile	Depressed	Clear	6	4	6	Jaundice 6th day
204	F. L. ♂	W	9/21/23	i	Neg.	1+	R. O. P. → R. O. A., med. forceps	8	..	Jaundiced, contusion, rt. eye	Flush	Blood tinged	14	5½	3	
214	J. M. ♂	W	10/ 3/23	i	Neg.	Neg.	L. O. A.	8	8	Cord very twisted, poor nursing	Flush	Clear	8	11	3	Jaundice 10/10
216	C. S. ♀	W	10/ 6/23	v	Neg.	Neg.	R. O. A.	7	10	Nursing poorly	Flush	Clear	8	10	3	10/9 jaundice
228	J. A. ♂	O	10/15/23	ii	Neg.	Neg.	L. O. A.	7	..	Cord twisted	Depressed	Clear	8	4	2	Jaundiced 10/16
301	J. W. ♂	W	2/ 2/24	i	Neg.	Neg.	R. O. A. 8th month premature	3	14½	Urobilin, bile negative	Flush, bones overriding	Clear	5	2½	2	Jaundiced 2/8
313	L. H. ♀	W	2/15/24	i	Neg.	Neg.	Premature, 8th month	5	2	.....	Flush	Clear	6	7	2	Jaundiced 2/23
385	J. G. ♀	W	7/23/24	iii	.....	4+	Premature, 7th month	..	..	Desquamation of skin, jaundice signs of syphilis	.....	.....	..	...	..	Died same day; no postmortem
388	G. R. ♀	W	7/22/24	viii	Neg.	Neg.	R. O. A.	7	15½	.....	Slight bulging	Clear	6	5½	1	Jaundiced 2d day
390	L. S. ♀	W	7/25/24	i	4+	Neg.	L. O. A.	9	..	Jaundiced	Slight bulging	Clear	12	5	1	
395	R. C. ♀	W	8/24/24	iii	Neg.	Neg.	L. O. A.	6	5	.....	Flush	Clear	8	5½	1	Jaundiced 8/30
458	J. C. ♂	W	10/18/24	ii	Neg.	Neg.	L. O. A.	6	6	.....	Depressed	Clear	8	5	1	Jaundiced 10/25
460	A. A. ♂	W	10/18/24	iii	Neg.	Neg.	R. O. A.	6	12	.....	Depressed	Clear	20 (crying)	...	1	Jaundiced 10/25

in only six cases, and yet these six babies had clear cerebrospinal fluid. The fact that in this series of cases the blood clotting time was taken within forty-eight hours after birth—and it has been observed that even in the condition of hemorrhagic disease in the new-born the blood clotting time may be within normal limits until the third day after birth, when it becomes lengthened—may account for the low incidence of a prolonged clotting time in this series. Besides, the bleeding time may be lengthened and yet the clotting time be within normal limits—the former condition being the more important and serious factor in the cases of intracranial hemorrhage.

IMPRESSIONS

1. Intracranial hemorrhage of varying degree in the new-born occurs rather frequently, in 9 per cent. of this series.

2. Its acute signs are often meager and may be apparently entirely absent, the more common signs being from drowsiness to stupor, from difficulty to refusal

6. The early recognition and the appropriate treatment of the acute condition of intracranial hemorrhage in the new-born may thus lessen that large chronic group of physically impaired and mentally retarded children.

20 West Fiftieth Street—1157 Lexington Avenue.

ABSTRACT OF DISCUSSION

DR. J. B. SIDBURY, Wilmington, N. C.: My studies have been in a somewhat different direction than Dr. Sharpe's. I have included in my study 130 cases of hemorrhagic disease of the new-born. The nurse collects the blood in a test tube from the umbilical vein, and the clotting time is recorded. A second test is made after from three to five days, and a third test is made before the baby goes home. I divided the cases into three separate groups: First, the cases of hemorrhagic disease with clinical signs; that is, those cases that gave symptoms of bleeding, either threatened oncoming hemorrhage or bleeding from some other cause. In that group there were sixteen cases. Second, the cases with no demonstrable bleeding, of which there were thirty-one. Third,

cases with normal bleeding time and no clinical symptoms, of which there were eight. Slightly more than 37 per cent. of the 130 cases belong in the classification of hemorrhagic disease of the new-born. Of this number there were sixteen which were definitely hemorrhagic disease of the new-born. Eight showed intracranial hemorrhages by lumbar puncture, and repeated lumbar punctures were done until the spinal fluid was clear. Of the sixteen patients that had definite hemorrhagic disease of the new-born, four died before any treatment could be instituted. One died over night and two others died while we were attempting to get blood ready for transfusion. Fifty of these patients received lumbar punctures, and of these eight had bloody spinal fluid. Some of them did not have prolonged bleeding time during the first twenty-four to forty-eight hours of life, but during the first week the bleeding time was increased, even to the extent of from thirty to forty minutes. Of the four babies that died, three had 4 plus Wassermann reactions. The necropsies showed hemorrhage in the brain, liver, pericardium and other viscera.

DR. J. B. DE LEE, Chicago: Thirty years ago I was in a position to make necropsies on a large number of new-born children, and I was struck with the frequency of hemorrhages in the brain and spinal cord and even in the prolongation of the dura mater into the sac beyond the lower extremity of the spinal cord—subdural and intradural hemorrhages the whole length of the cerebrospinal system. I have had occasion ever since to notice this occurrence. The frequency of hemorrhages in the brain and spinal cord that were macroscopically and microscopically determined was recently brought out by Schwartz. He said that in 65 per cent. of 130 children who came to necropsy before the age of 6 months there were hemorrhages or the results of hemorrhages in the brain, and he believes that a large majority of the diseases of children in the first six months after birth are the immediate or remote effects of these hemorrhages. Now it remains for a neurologic surgeon to shock our obstetric brothers into a realization of the frequency of this cerebral damage. The point to be noticed with great clearness is that these injuries occur not alone in hard forceps, version and extraction deliveries but also in so-called normal spontaneous deliveries. It therefore behooves us to determine the causes with a view, of course, for their prevention. The first thing that strikes us is that prolonged natural labor is a most potent cause of the trouble. That immediately brings to mind certain traumatisms or conditions that produce caisson disease. The child during labor is under pressure and it has also suffered from a slight degree of asphyxia throughout the whole labor, similar to caisson workers. When the child's head is born, that part of the body is relieved of the pressure; but the body itself is continued under pressure and as a result the blood is forced into the brain with increased power, resulting, if the blood vessels of the brain are damaged, in minute or larger hemorrhages. This point is very well brought out in modern times in the use of pituitary extract. Our pathologic department makes a diagnosis of pituitary extract death in the child at postmortem without inquiring into the previous history of the case, simply from the macroscopic findings. The reason is plain. The pressure effects exerted by the action of the drug and the chronic asphyxia natural to labor become more severe when the drug is given and later become acute asphyxia. There is some degeneration of the blood vessels produced by chronic asphyxia. There is also some alteration of the blood produced by chronic asphyxia. These, either one or the two together, may be the fundamental cause of hemorrhage and may, as the last speaker said, explain the hemorrhagic diathesis of the new-born; but hemorrhagic diathesis of the new-born is almost unknown in infants delivered by cesarean section. It seems, therefore, that this condition of the blood, if it does occur, is due to a passing influence exerted on the baby during labor. How can this traumatism be avoided? In the first place, we must recognize that the so-called natural powers of labor can produce direct and indirect damage to the brain. The uterine muscle is strong enough to fracture the skull and to fracture the arms and also to produce such increased abdominal tension in the body as to provoke hemorrhages in the peritoneum and in the liver. A mild reduction in the power of the uterine contractions can be effected by anesthetic methods which we employ, either scoplamin-morphin or Gwathmey's synergistic method or morphin alone. The conduct of the first stage of labor tends to reduce the damage of the blood, and the proper conduct of the second stage aims to reduce damage to the brain and cord tissues. I am putting in a plea for a more conservative, which sometimes means more intervention, course in labor, the relief of pain especially in the first stage and the prevention of damage in the second stage, by proper intervention before asphyxia of the child or injury to its delicate structures has been effected.

DR. WILLIAM SHARPE, New York: It was indeed surprising that the blood coagulation time was not found lengthened in a larger number of cases in this series; in fact, not one of the children with blood in the spinal fluid had a lengthened coagulation time in this series. Dr. Sidbury, in explaining this to you, is, in my opinion, correct. Very often in hemorrhagic disease of the new-born the coagulation time is not lengthened until after the third day of life; these tests were made within from twenty-four to forty-eight hours after birth and possibly, if any of these did have a lengthened coagulation time later, these cases might be considered latent hemorrhagic disease of the new-born at the time of birth; however, I do not believe that these infants having blood in the cerebrospinal fluid within forty-eight hours after birth without a lengthening of the blood coagulation time should be considered as presenting hemorrhagic disease of the newborn unless the blood coagulation time does become definitely lengthened later, and that this lengthening of the coagulation time should be in no way secondary to the hemorrhage itself as might result from a process of hemolysis. Whether the absorption of hemorrhage within the cerebrospinal dura or hemorrhage elsewhere within the body, as intraperitoneal, does tend to lengthen the coagulation time after several days of its existence is not known; I think that some investigation along this line might be of value. Dr. De Lee has very well emphasized the importance of intracranial hemorrhage in the new-born—not only in its immediate acute effects but also in the chronic conditions resulting from the incomplete absorption of intracranial hemorrhage occurring at the time of birth; Dr. De Lee has mentioned the article of Schwartz of Berlin, and I might add that only within the last ten months Schwartz has written that "the pathology of the first month of life is completely dominated by the birth injuries of the brain." And Fischer of Basel has stated that his postmortem observations at the institute have convinced him that "the 10 per cent. of deaths during the first month are chiefly due to cerebral birth injuries." Huenekens, within the last year, stated that "the recognition of hemorrhage of the new-born is a most neglected phase in their care and yet it is a most important one." I hope that similar tests may be made in other clinics merely to prove or disprove our findings of the frequency of intracranial hemorrhage in the new-born, and in this manner it may be possible to develop a method of treatment of the acute condition and thus lessen the increasing number of children with chronic cerebral spastic paralysis with their varying degrees of mental retardation.

Transportation of Lead in the Body.—That the greater part of the lead in the blood is held by the plasma and that but little is carried in the cells has been ascertained by experimentation. . . . When a soluble salt of lead is added to blood serum, a precipitate, probably lead albuminate, an organic salt, forms at first and then dissolves. This is not particularly insoluble in water and is quite sensitive to changes in acidity. The maximum precipitation occurs at p_H 5.8, which is propably the iso-electric point, for above or below this the salt redissolves. The precipitate is white and separates easily from solution. When dissolved in a few drops of dilute hydrochloric acid and treated with hydrogen sulphide gas, no change in color occurs until after a short time lead sulphide precipitates rapidly.—Aub, Fairhall, Minot and Reznikoff: Lead Poisoning, Baltimore, 1926.

THE PRODUCTION OF EPITHELIAL LINED TUBES AND SACS

AN EXPERIMENTAL STUDY *

JOHN STAIGE DAVIS, M.D.
AND
HERBERT F. TRAUT, M.D.
Rockefeller Fellow in Plastic Surgery
BALTIMORE

In the course of another series of experiments, it was noted that epithelial lined cavities were occasionally formed as a by-product. Realizing the possible clinical importance of this finding, we undertook a group of experiments with the hope that a practical method of producing epithelial lined tubes and sacs might be developed.

METHOD

The study was made on a series of twelve dogs on each of which two epithelial lined cavities were produced. Under ether anesthesia, the abdomen was shaved and washed with green soap followed by benzine and alcohol. The skin was then painted either with 5 per cent picric acid in alcohol or with 2 per cent mercurochrome-220 soluble in alcohol-acetone solution.[1] The latter was found to be much more efficacious than iodine in cleansing the skin and somewhat better than the picric acid solution. A whole thickness graft was then cut, its shape depending on whether it was desired to make a tube or a sac. If the object was a tube, the graft was cut long and narrow, the width of the graft being slightly greater than the diameter of the desired tube. If a sac was desired, the graft was cut in the shape of an ellipse with a width nearly approaching its length. The graft was then placed directly on one of the abdominal muscles from which the fascia had been stripped back, and was sutured in position under approximately the same tension it had had as part of the external skin (fig. 1). The muscle fascia was drawn over the graft and sutured so as to form two layers; then the subcutaneous tissues and the skin were carefully closed (fig. 2). The grafts were left in place from twenty to forty days. The animals were then killed and the buried tissues with adjacent structures were carefully removed and fixed in solution of formaldehyde (4 per cent).

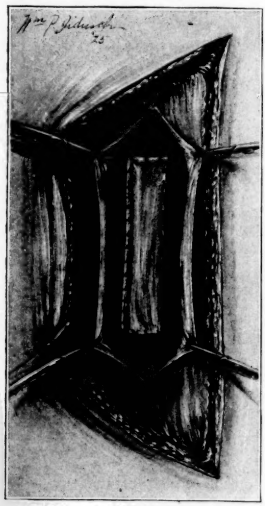


Fig. 1.—Whole thickness graft sutured under the desired tension directly on muscle tissue; the line of the skin incision and retraction of the skin over the muscle may be noted.

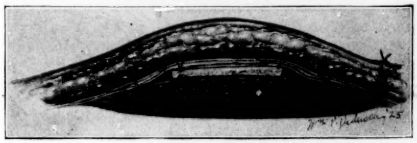


Fig. 2.—Overlapping of muscle fascia over the graft; the line of skin closure should be noted.

COMMENT

The result of this procedure was the formation of an epithelial lined cyst whose shape depended on the shape of the buried graft (figs. 3 and 4). The epithelium of the graft grew outward from its margins and in every case completely covered the contiguous tissues. The thickness of the epithelium varied on the two sides of the cyst, that on the side occupied by the whole thickness graft naturally being thicker than that on

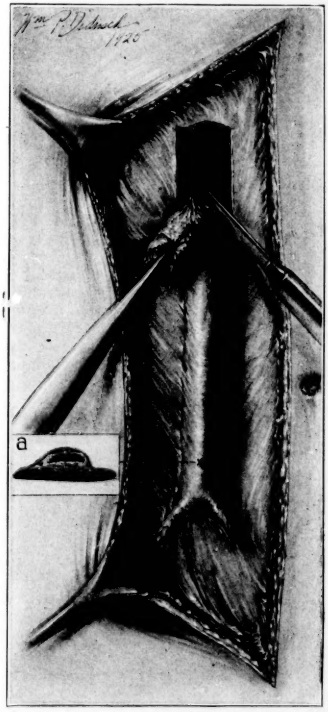


Fig. 3.—Appearance of epithelial lined tube, 32 days old, being raised from the rectus muscle: *a*, cross section of this tube showing the epithelial lining, which has a rough appearance because of exfoliated epidermis and growth of hair.

* From the Surgical Department of the Johns Hopkins University and Hospital.

1. Mercurochrome-220 soluble, 2 Gm.; distilled water, 35 cc.; alcohol, 95 per cent, 55 cc.; acetone, 10 cc. The mercurochrome is dissolved in the water and then the alcohol and acetone are added to the solution.

the opposite side, where it was merely the outgrowth from the graft. As the age of the cyst increased from 20 to 40 days, the thickness of this epithelial layer increased (fig. 5). Beyond forty days another factor comes into play; i. e., the pressure exerted by the fluid secreted within the cyst. This, if allowed to increase, will eventually cause a necrosis of the cyst lining, with maceration of its epithelium. As this is not desirable, forty days may be taken as the maximum time allowable for the formation of a proper cyst. On the other hand, the growth of the epithelium is not complete under twenty days, so that these time limits establish themselves rather definitely, for the object in view.

Fig. 4.—Epithelial lined sac twenty-eight days after the implantation of the graft; the fascia layers are intact.

Examination of a cross section of these tubes or sacs shows not only that the epithelium surrounds the lumen but that it is several cells deep and is in a viable condition. On the side opposite the graft, the wall of the tube depends much on the nature of the overlying tissue for its thickness and ability to retain its shape (fig. 6). The fascia serves admirably for this purpose, although if a thicker wall is desired the graft could as easily be buried between two muscles

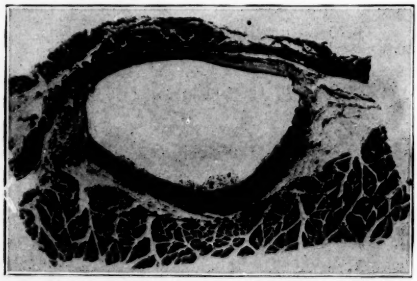


Fig. 5.—Cross section of an epithelial lined tube, magnified: The graft, which is directly on the muscle, has blended into the surrounding structures to such an extent that it is difficult to differentiate sharply its original outline; the epithelial lining is continuous, as are also most of the connective tissue fibers.

or in the body of the muscle and thus a tube or sac be obtained which was possessed of a muscular wall throughout.

The cysts were of various sizes. The largest tube measured 18 cm. in length and 2.5 cm. in diameter, whereas the smallest was about 2.5 cm. in length and 0.2 cm. in diameter. Little success was obtained in the sacs that were more than 6 cm. in diameter, because the epithelium did not grow fast enough to line the larger sacs before the pressure of the cyst fluid became so great as to prevent further growth. The reason is easily understood. One-half the circumference of the cyst, which is the distance the epithelium has to grow, increases as $\frac{\pi r^2}{2}$ so that any slight increase in diameter means a correspondingly great increase in circumference. For example, in a cyst that has a diameter of 6 cm., the epithelium must grow out from the margins for a distance of about 7 cm. from each edge, to meet and completely line the cyst. This it does usually in about thirty-five days. If, perchance, the epithelization is not complete in forty days, the pressure of the secreted cyst fluid usually inhibits any further extension.

For these reasons, a cyst measuring 6 cm. in diameter seems to be the maximum that it is possible to

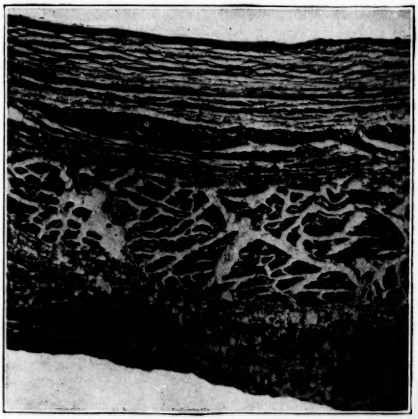


Fig. 6.—Section of same tube opposite graft, seen under high power: The structures, excepting the skin and subcutaneous tissue, making up the wall of the tube are shown; the epithelium lining the tube, also the connective tissue and the muscle, may be noted.

obtain by this method. In this discussion, a shrinkage of approximately 10 per cent has been taken into account, this being about the normal amount of contraction.

The malpighian layer of the graft is the portion that makes the outward growth. It is closely followed by a supporting layer of fibroblasts, which later shrinks and causes the contraction referred to above. The squamous layer develops much later, as the layers of the malpighian cells become thicker. The outgrowth occurs from all margins of the graft, clinging to the tissues that have been closed over it, and progresses until there is a meeting of the epithelium on the wall of the cyst opposite the whole thickness graft.

The hair on the buried whole thickness grafts was undesirable, of course, although it in no way hampered our experiments. However, it does serve to emphasize the necessity for selecting non-hairbearing skin for the whole thickness graft, if the method is to be of value for permanent surgical work.

Stronger and larger cysts might be obtained in clinical work by late drainage through a small opening under strict aseptic procedures. Aspiration would be even better for this purpose.

The facts brought out by these experiments may be of considerable value, as the formation of epithelial lined tubes and cavities that will be permanent is the key to the solution of a number of difficult clinical problems.

Among the problems to which it may be applied might be mentioned the formation of the buccal sulcus; the relaxation of scar tissue, both superficial and deep, and formation of the esophagus. A further report on the clinical use of the information gained by this experimental work will be presented at a future time.

CONCLUSIONS

Epithelial lined tubes or sacs can be consistently produced by burying whole thickness grafts under aseptic conditions.

The strength of the walls of these cysts depends on the tissues on which the graft is placed and on those which are closed over it.

The shrinkage is comparatively small.

The largest cyst produced was that formed by a graft 6 cm. wide.

The shape of the cyst can be regulated by the size and shape of the graft.

OSTEOMYELITIS OF THE INNOMINATE BONE

REASONS FOR RARITY OF LOCATION; METHODS OF REPAIR, OPERATIVE AND OTHERWISE *

CHARLES F. PAINTER, M.D.

BOSTON

I employ the term osteomyelitis in the title of this paper not in its clinical but rather in its pathologic significance. It is a notable fact that the innominate bone is not frequently the site of any inflammatory processes. Not more than 7 per cent. of all osteomyelitic lesions in bone occur here. So far as tuberculous lesions are concerned, I do not know the figures, but feel confident that the percentage is even less. Somewhat the same thing is true of other flat bones, as the skull, the scapulae and the ribs.

There must be some explanation for this relative exemption, an explanation that has to do with the protection these structures get from certain influences that are provocative of infection in bone. The rôle played by trauma in the incidence of disease conditions, no matter what they are, is a moot question. Workmen's compensation laws and accident insurance provisions have not tended to lay any less emphasis on questions of this sort as they arise in accident litigation. It has been held for a long time that in the etiology of infective processes trauma plays a part or might play a part, contributory in character, but serving to make easy the work of the primary causes of all inflammation; viz., the specific organisms themselves. This is a truism having general acceptance. It cannot be that a mere difference in the shape of a bone is the factor determining whether it shall be the subject of bacterial invasion or not. It may be that the amount of red bone marrow, the location and vascularity of the epiphyses, etc., has something to do with the ease with which the blood stream conveys the infecting organism into a favorable locality for its growth and development. That would concern the primary one of the two factors referred to above as being concerned in the incidence of an osseous infection. It may be that protection of the osseous structure from the strains and traumatisms of life is reason enough for exemption, to a relative degree, of those skeletal structures from becoming the site of inflammatory processes. If this is true, then the second of our well recognized causative factors in the excitation of osseous inflammations is affected. If it can be shown in the case of the ribs, scapulae and innominate bones that both of these factors are concerned, then not only is the less frequent incidence of diseases of this sort in these localities made understandable, but also the general principle underlying the extent to which trauma plays a rôle in the incidence of disease receives confirmation.

Let us take up this matter from these two anatomic standpoints. In the first place, the pelvic girdle is put together very substantially. The ligaments that join the various bones are very strong and are so distributed and reinforced by fascial and muscular backing that they are capable of withstanding great strain. The infrequency with which one ever hears of an actual demonstrable separation or dislocation at the juncture of the pubic bones or the articulations of the ilia with the sacrum confirms the foregoing postulate. Spondylolisthesis, or forward luxation of the last lumbar vertebra on the sacrum, is a great rarity, as are all displacements of vertebrae outside the minds of the osteopaths. The sacro-iliac joints are true joints, so far as their structure is concerned, but are placed where they are to act as shock absorbers. Consequently, the amount of motion normally present is very slight and is controlled or limited to this trifling amount by the strength of the ligaments holding the ilia in relation to the sacrum, in large part, and secondarily by the conformation of the joint surfaces and wedging of the sacrum between the ilia. At the symphysis pubis there is very little motion, and between the last lumbar and the top of the sacrum there is also very little, whereas at the sacro-iliac joints there is only enough to change the diameters of the superior and inferior straits during confinement to a possible one-quarter inch.

We have, then, two important causes for the incitement of inflammatory processes in bone pretty effectually cut out; viz., trauma from without as well as from within, for when motion in contiguous articulations is barred, the possibility of infliction of trauma through them to the bones entering into their make-up is eliminated to a very large extent. When we consider the way the ribs articulate with the spine and the rounded conformation of the thorax, we see here conditions unfavorable for the infliction of trauma, in a manner or to a degree sufficient to establish a locum resistentiae minoris in the ribs, clavicles or scapulae; for somewhat the same situation prevails in these localities as was noted in the pelvic girdle; viz., joints on either end of the rib providing little motion and a contour which, coupled with the springiness of the rib, diminishes the intensity of any trauma. Fractures of ribs, though frequent, do not furnish a large proportion of all fractures, which fact also indicates that the foregoing reasons are probably operative in accounting for the relative infrequency of broken ribs.

* Read before the Section on Orthopedic Surgery at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

In the skull, dissociation from a joint with any considerable motion and a rotundity adapted to the shedding of trauma, so to speak, puts this set of flat bones in the same category with the ribs and pelvic girdle, so far as suceptibility to traumatic influences is concerned.

In regard to the second anatomic factor having an admitted bearing on the localization of infective processes in bone, I shall now have something to say. I have said "admitted bearing" because I assume that

Fig. 1 (Case 1).—Obliteration of sacro-iliac joint by an inflammatory process, probably an osteomyelitis, the pathologic changes in which terminated in appearances that were very similar to osteitis fibrosa.

all are agreed that it is through the blood stream that infections reach the place where they create those destructive lesions characteristic of the particular process under discussion. Furthermore, in the case of tuberculous infections showing a predilection for epiphyseal centers, it has been pretty generally assumed that vascularity of the epiphyses accounts in large measure for it. Bone marrow is the seat of considerable metabolic activity, but of not as great an amount as that which must go on where the cellular proliferation concerned with growth is taking place. Nevertheless, the fabrication of red blood corpuscles must entail considerable metabolic change and call for greater vascularity than is demanded in most soft part tissues. We must assume also that, in accounting for the greater prevalence of osteomyelitis in the shafts of long bones and of tuberculosis in their epiphyses, some consideration must be given to the fact that the tubercle bacillus is more difficult of cultivation, even in the laboratory, than is *Staphylococcus aureus*. Hence, we might expect a greater affinity on the part of the tubercle bacillus for localities providing the more inviting feeding grounds, other things being equal.

The thinner layer of marrow between the cortical plates of flat bones may very well provide a less attractive environment for *Staphylococcus aureus* than the richer and more abundant marrow of the long bones, and for this reason, in part at least, may account for the relative infrequency of osteomyelitis in the flat bones of the body. The location of the ossification centers or epiphyses and the direction of the nutrient arteries in the long bones determine the times when epiphyses located at opposite ends of these bones unite with their diaphyses, thus indicating the extent to which blood supply determines bony growth, and if normal cellular activity is thus accentuated, why not abnormal?

The shafts of long bones have commonly one ossification center in the midportion of the shaft, near the foramen for entrance of the nutrient artery. Such accessory ossification centers as they may have are for the development of any anatomic tubercles or outstanding prominences that are characteristic of them, as for example in the femur, beside the central one, there is one for each trochanter, one for the head and one for each of the condyles. In this bone the nutrient artery is directed toward the upper end, the epiphysis of which unites before the lower epiphysis. In the flat bones, there is one ossification center for the major portion of the bone, and if there are special centers required for the development of special features they are provided, as in the long bones; but there are fewer definite nutrient foramina.

REPORT OF CASES

Each of the four cases to be reported presents certain features that are interesting as bearing on the general etiology of osteomyelitic lesions of the innominate bone and furnishes an answer to some of the queries raised by those who have reported such cases in the literature. All the patients are adults varying in age from that of a college student to that of an elderly woman. One lesion was almost certainly of tuberculous origin; two were probably streptococcic, and the fourth was in all probability caused by *Staphyloccocus aureus*, though there may have been a mixed tuberculous infection. One patient died, more than a year after operation, from pulmonary tuberculosis. In the probable streptococcic cases the patients are both well and have remained so for more than two years following their operations; and the fourth, the patient in whom there may be a mixed infection, a woman of more than 60 years of age, on whom two operations

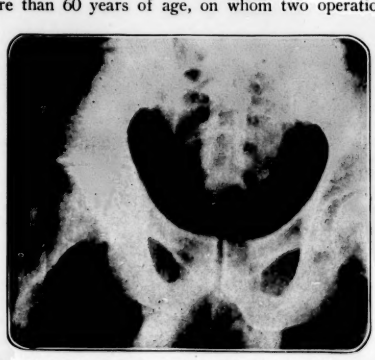


Fig. 2 (Case 4).—Condition similar to that in Case 1 following a virulent throat infection and having the clinical symptoms, at the time, of an acute osteomyelitis.

have been performed in the last three years, has still a sinus from which a very little drainage comes, but she is otherwise symptomless.

CASE 1.—A girl, a sophomore at Wellesley College, seen, Nov. 21, 1922, had always been well except for a serious illness in 1914, when she was thought to have had hip joint disease and was in bed for three months with traction and spent several more months in convalescence. However, she entirely recovered functionally, as well as symptomatically, from this illness. When she returned to college in the fall of 1922, she complained to the hygiene department that her

back on the right side, low down, was lame and sore, and she thought she felt some difference in the two sides on examination. Nothing was discovered by the nurse in the department, and she was assured that she was all right. Symptoms persisted, however, and November 20, she consulted Dr. Raymond, the college physician, who referred her to me. She had no limitation in spinal motions, but a swelling was present to the right of the median line, and not far from the posterior superior spine. It was quite tender to touch, and was evidently caused by some subcutaneous swelling which did not fluctuate; she had had symptoms that suggested inflammatory disturbances in this locality, though they seemed to have subsided permanently. The roentgen ray showed a sacralization of the fifth lumbar vertebra on both sides, more marked on the right, and complete fusion of the sacro-iliac joint on this side. It would appear that this condition in the sacro-iliac joint was really caused by the disturbance that she had in 1914; that it was not hip disease at that time, but was merely the development of an acute arthritis or possibly of an osteitis or osteomyelitis close up to the line of the sacro-iliac articulation on the right side. In view of the uncertainty as to diagnosis, it seemed best to explore this, and she entered the Newton Hospital, where an incision was made around the swelling noted above, where a hard, gristly, and in spots more or less cystic tissue having some fibrous connections with the underlying fascia in this locality was dissected out. This extended quite well up toward the spine, as high as possibly the second lumbar vertebra. The cystic openings in the tissue contained what might have been organized blood clot or hemorrhagic material, the result of oozing from blood vessels in the denser tissue. The patient made a good recovery and healing was complete with the exception of a small point kept open at the site of a wick, which was put in to drain off any possible hematoma. From this opening there were two or three quite abundant discharges of serous fluid, slightly blood tinged. Where this came from was not possible to determine.

Microscopic examination of a mass of firm tissue from the right sacro-iliac region, with small foci of fat and at one point a rounded mass of clot, showed that the specimen was made up of fibrous connective tissue and fat. In addition to old fibrous connective tissue occurred large masses of what was evidently old granulation tissue with a large amount of hyaline, intracellular substance, still rather vascular, also showing perivascular collections of lymphoid cells. Throughout this tissue were large focal collections of lymphoid cells as well as marked, flattened cells suggesting synovial membrane. Beneath this was a region of diffuse hemorrhage. Microscopic examination of sections, including the clot described grossly, showed a similar picture except that here hemorrhage was much more diffuse and had spread through tissue in all directions, together with large numbers of polymorphonuclear leukocytes.

There was no evidence of new growth or tuberculosis. The diagnosis was chronic and acute inflammatory disturbance.

Roentgen-ray examination of the lower lumbar spine and sacro-iliac joint showed a congenital malformation of the fifth lumbar vertebra and sacrum, with sacralization of the fifth lumbar and obliteration of the right sacro-iliac joint.

Dr. George M. Sabin, who treated the patient at the acute period of the primary attack in 1913-1914, said in a letter to me that she was taken with acute pain in the hip, unceasing in severity, and with ascending temperature. At the time she had infected tonsils from which streptococci in pure culture were obtained. As all symptoms seemed to be referrable to the hip and as she was made perfectly comfortable by extension, Dr. Sabin made a diagnosis of acute infectious arthritis. Dr. F. H. Albee of New York a few days later saw her in consultation. He made a diagnosis, without any reservation, of acute infectious arthritis, probably of streptococcic origin, and advised continuation of the extension, already applied. The case progressed normally and the patient finally was up and about and in due time resumed her normal life. Dr. Sabin also said that he thought the patient's condition dated back to a fall on the gymnasium floor while she was at the Russell Sage School in Troy. A letter from Dr. Albee, who saw the patient at her home in consultation some years ago, said that at that time she was suffering quite severely from an acute infection, and that it was not very clear just where the focus had originated.

This patient was very sick for several weeks, delirious from high fever and in great pain. Traction and prolonged bed treatment resulted in bringing her through the acute phase of her trouble, but she was six months in getting back to where she was before the trouble came on. The roentgen ray showed that she had a focus of osteomyelitis in the ilium so close to the line of the sacro-iliac joint that on that side the joint is pretty well obliterated. The cavity in the bone has filled in, but the pathologic material, removed five years after the inflammation occurred, evidently escaped from this focus and slowly worked its way out to the surface just beside the posterior inferior spine of the ilium. It had a good deal the appearance of Swiss cheese, the holes of which had been filled with chilli sauce. In consistency it was more gristly than the material I have obtained from cavities in bone where osteitis fibrosa was undoubtedly the diagnosis, but I am convinced that it represented a mass of inflammatory material extruded from the cavity in the ilium, which had been rendered innocuous, and was trying to eliminate itself from the body. The long continuance of the serous discharge that came out through a very small opening over a period of several months without any suppuration or alteration in its character was not unlike the fluid I have not infrequently seen in bone cysts, and I am inclined now to believe that in the process of repair the abscess cavity had been converted into a cyst, and that the contents of the cyst, both fluid and solid, were ultimately evacuated and the cyst became filled in with new bone. Though the evidence is not complete, nevertheless, I believe this case furnishes a picture of the various stages of an osteomyelitic focus, caused by a streptococcic infection, from start to finish, when the focus was so located that the infection was pretty well bottled up and Nature, being unable to get a vent for the pus, had to handle the situation in an unusual way.

The changes characteristic of osteitis fibrosa seem to represent the end-result in the conversion of a mass of infective detritus into an innocuous residue which can be handled as a foreign body, comparable to the claim of the notorious quack called in consultation on a puzzling case, who informed the anxiously waiting family that he did not know what the matter with the patient was, but he could "throw her into fits and he was hell on fits."

CASE 2.—A telephone operator, aged 23, seen, Sept. 24, 1923, fell off a tall stool, sitting down heavily, more than a year before. Not much but the immediate discomforts of the fall troubled her at the time, but in the course of three or four months she began to have considerable pain in the left sacro-iliac region, which at last became so pronounced that she was forced to quit work for six months. In the interval the symptoms largely disappeared, only to recur as soon as she returned to work, and they became more and more aggravated during the past summer. She then consulted her physician in North Attleboro, who discovered a swelling over the left sacro-iliac region and brought her in for consultation. This swelling was fluctuant to some extent and very tender, and strongly suggested the presence of an inflammatory disturbance in that locality. This was confirmed by a roentgenogram, which showed a destructive, osseus focus at the bottom of the left sacro-iliac synchondrosis.

Under ether at the Attleboro Hospital, about two weeks later, this was cut down on and the abscess drained, and a

cavity in the sacrum and ilium about the size of a pigeon's egg was cleaned out.

The patient had an arrested case of pulmonary tuberculosis. She never got about after the operation. The incision never closed permanently, and after several months she slowly began to develop evidences of pulmonary disease, from which she died about a year and a half after the operation.

This young woman had as definite a relationship between the reception of a severe trauma to the region in which, about two months later, she developed a tuberculous osteomyelitis as one often meets. She sat at her work on a high revolving stool. She slid off and sat heavily down on the office floor without the intervention of anything to break the fall. The immediate effect was negligible. As a young girl she had been under treatment for pulmonary tuberculosis, but the disease had been regarded as arrested for a number of years. Cessation from work gave her the impression that the trouble had disappeared, but resumption of it brought back all the old symptoms and, in addition, objective evidence of an abscess near the posterior superior spine and the roentgen-ray appearances of a destructive lesion in the ilium and sacrum low down on the line of juncture of the secrum with the ilium. There was a carious mass of bone in this locality, which was curetted. There was no sequestrum. In this case, therefore, trauma and preexisting tuberculosis, still lying dormant through several years, had the opportunity to act, and did so with a fatal termination.

CASE 3.—A woman, aged 65, seen April 27, 1923, had been well until November, 1922, when she awoke one morning after having gone to bed as well as usual, with acute pain in the right hip. She could scarcely walk, was quite lame, and had a great deal of pain referred to the hip. About six or eight weeks later, a swelling appeared near the right posterior superior spine which Dr. Webb opened; a large quantity of pus escaped and a sinus had been discharging ever since. Her temperature had been in the neighborhood of 102 F. for some time. Roentgen-ray examination showed an osteomyelitic focus in the right ilium. An operation was performed, at which the sinus was followed down to the bone and a cavity the size of a pigeon's egg was found partly in the sacrum and partly in the right ilium. This was cleaned out and wiped out with iodin, a wick being left in. Convalescence was uneventful and the patient immediately picked up generally, recovered her color and gained weight. The sinus persisted, but at the end of about a year she began to have more pain and a more profuse discharge. A second operation was then done and a good sized sequestrum was removed from the old cavity. After thorough curetting, the cavity was wiped out with phenol (carbolic acid) and absolute alcohol. This operation was done in January, 1924. Since then she has regained her weight, gets about freely, has no discomfort, and feels well. There is a very slight weeping from the sinus.

This patient should be outside the conventional age limit for osteomyelitis or tuberculosis either, but started in with a typical clinical history of osteomyelitis: sudden onset, high temperature, great pain and, in a week or so, evidence of an abscess in the buttock, which was opened and drained. The roentgen ray revealed a cavity in the ilium. This was later exposed, its walls crushed in, and all the softened bone was removed by gouge and curet. At the time of the first operation sequestration had not started, and there was more bone rendered nonviable by the inflammation than appeared to be the case at operation. During the next few months this process was completed and a second operation removed the sequestrum, and now, though the sinus is still discharging, the patient suffers no discomfort and is in a normal state of health.

The following history was given by the patient himself, a physician, and is supplemented by the records of Dr. J. M. Gile of Hanover, N. H.

CASE 4.—A physician, aged 39, had had the usual childhood diseases. He was operated on for a mastoid abscess at 12. He had bronchopneumonia in 1917 and influenza in 1918. He used tobacco moderately and was not a total abstainer, as to liquor, but was never intemperate. He had had neither gonorrhea or syphilis. His father died of cancer of the prostate in 1922; his mother was living and well, and one brother and one sister were living and none dead. The patient writes:

"On Sunday, Aug. 7, 1922, I was called to a patient and from her condition I thought it best to stay all night rather than be called in the night. In the morning I went home not feeling any better for my night's experience and thought at the time that I had contracted a cold, but I worked Monday and Tuesday as usual and Tuesday evening was out till about 11 o'clock. Tuesday morning I was up and went to my patients as usual, came back home about 11 o'clock in the morning and while waiting sat down on the step of the piazza for probably fifteen minutes. When I got up I felt a catch in my back which I was sure was lumbago. From that time till 5 p. m. the catch and pain grew steadily worse, and about 6:30 I went to bed and had about all that I could do to get upstairs. I was a little chilly and had started to cough a little but I do not think I had any fever. There is little I can add except that the pain and the catch grew worse and the temperature went up until Friday it was 104. I was delirious and had quite a cough. I can't remember much more about it except at occasional intervals. As I recall, I do not remember any sensitiveness or sore spots on my back or hip at this time. I think I was taken to the hospital on Wednesday, a week from the day I was taken ill, and was operated on the first time the next day. I will say further that I have practically no limitation of movement in my hip joint, and, except for being a little short on the endurance side, and that is fast improving, I am as well as ever."

Dr. John M. Gile supplied the following information from the hospital record:

"On admission to the hospital, the temperature was 103 F. The pain was most severe in the left lumbar region, but extended downward over the hip. There was definite fulness over the left lumbar region and marked tenderness with pressure, but the pain was most violent on any attempt to move. The white blood count was 10,000. The urine showed a slight trace of albumin. The roentgen ray showed definitely a deep shadow extending from the left kidney down to the crest of the ilium. A diagnosis of deep lumbar abscess was made. Incision was made through the left lumbar mass. No pus pocket was found, but the kidney was infiltrated with much grayish fluid. Drainage was inserted, and for the next five days symptoms were gradually relieved and the temperature dropped to normal. Following this, the temperature rose again and pain increased, now most marked in the gluteal region. Another roentgen-ray examination, September 6, gave appearance of disease of bone at the left sacro-iliac junction. A diagnosis of osteomyelitis of the left sacro-iliac joint was made. Operation by Dr. Painter showed an area of bare bone along the line of the sacro-iliac junction. In chiseling into the bone, a small pocket of pus was evacuated. Recovery was slow and tedious, with complication of what appeared to be edema of the lungs, with a good deal of cough and dyspnea. The high temperature continued for several weeks. The patient was discharged from the hospital, October 14, much improved, but with the wound not entirely healed. Improvement, however, was steady, though slow. The patient did not begin to do any work until the following spring, but now appears to be in a condition of vigorous health. There is at present no limitation of motion, nor any disturbance with the hip. He is an active man and has hunted this fall, as usual."

This was a most interesting case resembling Case 1 in many respects. It was probably a streptococcic infection, though there is no laboratory proof of it. At the

height of the acute infection, when the patient was too delirious to be of much aid to those who were seeking to find out the cause of his symptoms, there was more to point to a phlegmon in the loin than to any osseous lesion, and the possibility of a perinephritic abscess could not be brushed aside. A few days sufficed to bring out the localization of the focus in the bone by means of the roentgen ray, for when I saw him it was very difficult to make a satisfactory examination. The approach to the affected region was made by stripping everything back from the whole posterior portion of the iliac crest, so that the sacro-iliac notch was exposed, and then opening into the ilium as is done in the operation for fusing the sacro-iliac joint. Necrotic bone was removed, and drainage was established. Recovery has been complete, and I have rarely seen a more virile, active man than he was when he dropped into my office, two years after. I have observed few patients as sick as he seemed to be just before his operation.

COMMENT

We have been considering four instances of inflammation of the sacro-iliac region, three of them of considerable severity so far as the condition which ushered them in was concerned, and one a chronic condition. They have practically all of them been located in the same part of the ilium; i. e., close to, if not actually at the start, in this joint itself. The incidence of these inflammatory processes so close to the articulation lends some color to the query, Are they not more likely primarily joint infections rather than juxta-articular osteomyelitis? Cases 1 and 4, probably streptococcic infections, were definitely arthritic before the process was terminated, the sacro-iliac joint on the affected side showing positive evidence of having become fused. In one of these (Case 4), operation was performed during the height of the infection and vent given from the diseased area, healing following the usual lines of filling in by granulation tissue and ultimate cicatrization. In the other (Case 2), operation was not performed until nearly five years after the onset of the trouble, at which time a mass of inflammatory material having close resemblance to that characterizing osteitis fibrosa was removed from a point quite remote from the seat of the original lesion. Its removal was followed by a sinus discharging thin, clear fluid, not unlike synovial fluid, which was probably the liquid residuum from a cystic degeneration, of which the solid material described above was the solid residuum. This method of disposal of inflammatory exudates is one not very commonly employed by Nature, but her versatility is shown here as in her treatment of the arborescent lipomas that are occasionally encountered in knee joints. These are undoubtedly caused by a low grade infection of the synovial membrane, resulting in extensive proliferation of the villi without erosive lesions of the synovia. The natural history of these capsular changes is complete absorption of infiltration, and thinning of the capsule to its original and normal thickness. This is apparently accomplished through a fatty degeneration of the villi from tip to base, accompanied by absorption of the fat, virtually a metaplasia. In only one of these patients has there been any indication of sequestration. It is evident that it is desirable to favor the escape of the products of inflammation of this sort from any locality, for apparently fusion of the sacro-iliac articulation is likely to be the result. How significant this may be, except possibly in women, we are not now in a position to appraise. Certainly, extension of the lesion throughout an innominate bone provides a serious situation with which to deal: multiple sinuses, extension to other bones and all the ill effects of chronic suppuration for which von Bergman's suggestion of subperiosteal resection of the innominate furnishes the only possibility of cure. My experience with one case, in an adult, in which this resection was performed, was enough to convince me that, like the marriage contract, it is not to be entered into "lightly or unadvisedly."

I am inclining to the belief that true osteomyelitis of the innominate bone is a rarer condition even than it has been thought, at least in the adult, and particularly in the iliac bones, and that quite a few patients who seem to have indications of this disease are really suffering primarily from an arthritis in the sacro-iliac joint, either tuberculous or toxic, with a certain amount of extension into adjoining osseous tissue after the thin cartilage covering this articulation has been eroded.

520 Commonwealth Avenue.

ABSTRACT OF DISCUSSION

DR. M. S. HENDERSON, Rochester, Minn.: Dr. Painter brought out the point that he was not exactly sure himself in these cases as to whether the lesion might not have been primary in the sacro-iliac joint. My conception of this subject when I saw the title of the paper, "Osteomyelitis of the Innominate Bone," was an osteomyelitis involving the wing of the iliac bone. The exact type of infection in Dr. Painter's cases is not determined, though the fact that one patient later died of tuberculosis is significant. The type of osteomyelitis, as I say, of the iliac bone that I had in mind was that in which the body of the bone was involved, and there was drainage and in some cases there were sequestrums. Our files in the Mayo Clinic, from 1910 to 1925, contained only twenty-eight cases of osteomyelitis of the ilium, three of the ischium, and seven of the pubic bone. I can remember some of these cases in which the drainage was situated over the body of the iliac bone, and we removed sequestrums and even then they failed to heal, because the condition had been so chronic, there was so much fibrosis of the muscle, and the bone itself had been perforated, that the muscles refused to fall in, and it was only by going in and cleaning out all this fibrous tissue, getting down to muscle and even removing a good deal more of bone, that we were able to get healing. The condition is a rare one, and it is only by bringing up and discussing these rare conditions that we can crystallize our idea on them.

DR. FENWICK BEEKMAN, New York: Dr. Painter's paper is of particular interest to me, as our findings at Bellevue Hospital in the Children's Surgical Division have been quite different from his. We have in the last four years seen three cases of acute hematogenous myelitis of the innominate bone in children. These formed about 6 per cent. of our cases of acute hematogenous osteomyelitis. All these children were admitted to the hospital in the acute stage, before sinus formation. All were streptococcus infections. Two were in the ischium and one in the ilium. The ischial infections had pointed into the soft parts in the adductor muscle planes, and the ilium infection was a bone abscess in the crest, a metastatic abscess. The ischium cases sequestrated. They had a long, stormy course, and it was several years before they were finally cured. I feel that all these cases were primarily osseous infections, rather than infections from joints. Dr. Painter's paper brings up a question that is of great interest from the etiologic standpoint. We know that most osteomyelitis usually localizes in the end of the bones which have the greatest activity in growth. And as there is not as much activity in the growth of the innominate bone as there is in the femur and in the tibia, this may account for the infrequency of infection of the latter bone. I believe that most cases of osteomyelitis are predisposed by the arrangement of the blood vessels in the metaphysis, and that these blood vessels of long bones are arranged in such form

that they are peculiarly susceptible to the lodgment of infection, which is not the case in the innominate bone.

DR. Z. B. ADAMS, Boston: I recently saw a case of osteomyelitis of the ilium, presumably starting at the sacro-iliac joint, because the sacro-iliac joint and the side of the sacrum had been eroded. The interesting thing about this case is that the symptoms began when the woman was 17 years old, and when I saw her she was 50. She had had eleven children, eight of them living. At times she had been laid up with this disease, which had extended from the region of the sacro-iliac joint forward to involve the ilium. There had been multiple sinuses, in the upper part of the thigh, the region of the posterior superior spines of the ilium, over the back of the sacrum, and also over the crest of the ilium, where she had had sequestration with bits of bone that had come out at times. This case shows what this disease will do and how long it may continue without doing any very great damage to the patient.

DR. CHARLES F. PAINTER, Boston: When I was asked to present a paper here, I had these four cases in mind, and they presented themselves to me as osteomyelitis in a rather unusual form. I changed my point of view as I worked up the subject. I still think that pathologically they may be considered as belonging in the osteomyelitis group. They certainly raise questions which were brought out here in the discussion, and this was the main thing that I wanted to see brought out; viz., as to the pathology of conditions of this sort and the methods by which nature handles the problem, which is not the usual and conventional osteomyelitic problem. The cases would have been much more interesting if they could have been considered in their minute detail instead of in the rather sketchy way in which I presented them.

Clinical Notes, Suggestions and New Instruments

ABSCESS FOLLOWING THE INTRAMUSCULAR INJECTION OF BISMUTH METAL (NEOTREPOL)

IRWIN C. SUTTON, M.D., HOLLYWOOD, CALIF.

Cysts and nodules are not uncommon following the deep intramuscular injection of the salts of heavy metals, but this is the first case so far as is known in which an injection of bismuth metal has produced an abscess.

This product was first prepared in France by Sazerac and Levaditi, who obtained bismuth metal in a fine state of division by the reduction of a bismuth salt. The bismuth is then held in suspension in a 10 per cent dilution of an isotonic solution. The therapeutic dose is from 0.15 to 0.20 Gm. of the drug, administered in a series of from ten to twelve injections, and is given twice a week.

REPORT OF CASE

History.—A married woman, aged 18, had been infected by her husband four weeks before examination. When seen, she had a rather large initial lesion on the left labium majus, and shotty inguinal glands. She was given an intravenous injection of sulpharsphenamine (from 0.3 to 0.4 Gm.) every other day for three injections, then one a week for five more. After her third intravenous injection she was given biweekly injections of neotrepol deep in the gluteal muscles, after the method of Stokes. Five of these were rather painful but provoked no masses or painful buttons of induration. After the sixth injection, however, she complained of a great deal of pain.

Physical Examination.—The patient was small and slightly underweight. In the right buttock was a tender, hot, red mass which resembled a large grapefruit. There were none of the cutaneous signs of syphilis, nor was there a marked glandular adenopathy. The mucous membranes were normal. The temperature was slightly elevated (99.6 F.).

Treatment and Subsequent Course.—The patient was advised to take hot sitz baths twice daily and to apply hot applications to the buttock in the interim. Small doses of codeine were given for the pain. Twenty-four hours later, a fluctuating abscess had formed with a definite pointing. This was incised, and chocolate colored pus discharged. There were a few flecks of blackish material, resembling coal dust. The abscess drained freely for several days until it finally closed. A roentgen-ray examination at that time did not reveal any deposits of bismuth in the muscles.

The contents of several ampules from the same batch of drug were found to be negative by anaerobic and aerobic cultures of broth and agar.

916 Taft Building.

BRONCHIAL ASTHMA DUE TO HACKBERRY (CELTIS) POLLEN

I. S. KAHN, M.D., SAN ANTONIO, TEXAS

I have not been able to find in the literature any other case of asthma with this particular botanic causation.

Mrs. B., aged 45, seen, March 9, 1925, for many years had had severe bronchial asthma lasting daily and almost continuously for several weeks from the middle of March to the end of April, with complete freedom from allergic symptoms at all other seasons of the year. She had lived in the same neighborhood in San Antonio for many years and had always been at home at this season.

The sharply defined seasonal incidence and cessation of the asthma suggested a tree as the only known air-borne pollination possibility coinciding with the history. Intradermal tests were positive to the pollens of the grasses and ragweeds, obviously impossible factors in her case. Of the trees pollinating at this season in the locality, tests were negative to the various oak pollens, pecan, ash, cottonwood, box elder and mountain cedar. Tests were positive to mesquite and willow. Of these, willow growth in this community is very scarce and is absent in the vicinity of the patient's residence, while mesquite is not an air-borne pollen. The patient herself suspected hackberry, of which there was a heavy growth around her home. The pollination season of this tree coincides with the patient's asthmatic symptoms, and pollen plates set out at her home were loaded with this pollen to almost the complete exclusion of other pollens. An intradermal test with 0.01 cc. of a 2 per cent extract of this pollen (0.02 Gm. to 1 cc. of Coca's solution and glycerin) produced a characteristic wheal from 3 to 3.5 cm. in diameter with pseudopodia, and with induration and erythema extending from the elbow to the shoulder lasting several days. A sharp attack of asthma did not clear for two days.

The patient's asthma cleared up as usual late in April, without treatment, and though living in the same environment up to this date, Dec. 10, 1925, she has continued perfectly clear, passing through both grass and ragweed pollination seasons without the slightest hay-fever or asthmatic symptoms.

Moore Building.

READING AND WRITING FOR THE RECUMBENT*

JOHN ALEXANDER, M.D., SARANAC LAKE, N. Y.

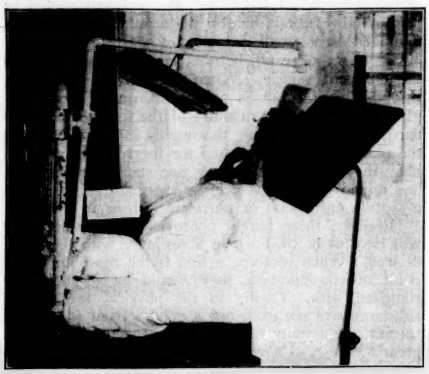
Fatigue and eyestrain that result from writing by hand on a board held against the chest, or from reading from a book held in the hand, are not only harmful in themselves but may seriously impair the morale of patients with chronic disease who must lie flat in bed for a long time. Provision of facilities for reading and writing with ease may well dispel much of the dread with which most patients face prolonged confinement in bed, and may furnish many possibilities for occupational therapy and contentment. On extensive inquiry I find that the devices described in this article are unknown to the medical profession at large and therefore justify this brief notice.

Typewriting may be as easily performed in the recumbent position as when sitting. A bedside table that is adjustable as to height and tilt (such as may be had at hospital supply

*From the Department of Surgery, University of Michigan Medical School.

stores) is put across the patient so that its lower edge rests lightly on a small pillow or pad placed on the patient's upper abdomen or on a plaster body-cast as pictured. A portable typewriter (the new Corona or the Underwood lend themselves to this use, but not the Remington, Hammond or old Corona) is then put on the table and caught in the wire rack that is incorporated in the table's edge. With his elbows resting comfortably on the bed, the patient may reach the keyboard with his fingers. Without any especial adjustment of the machine, writing proceeds with the usual speed. Although the keys and writing point are perfectly visible, it is an obvious advantage for the patient to learn the touch system and so to eliminate the need for watching the machine. In fact, teaching oneself the touch system is one of the pleasantest forms of occupational therapy.

The special bookrest[1] shown in the illustration has been designed by Miss Dorothy Forbes of Boston and will firmly hold large or small books or magazines in almost any position. It may be raised or lowered after the loosening of a single wingbolt. The reading board is joined to the bracket by means of a ball and socket joint, which may easily be loosened or tightened by an accessible lever. This joint permits the book to be held in the proper reading position for a patient who is



Special bookrest and typewriter arrangement for use of patients who must remain in a recumbent position.

sitting upright or for one who is lying flat or in any intermediate position, or even on his side The universal adjustability of the reading board makes it easy to keep the page at exactly the proper angle with the eyes and so to eliminate eyestrain. A simple arrangement for holding the book permits the leaves to be turned in an instant with one hand. The whole bookrest is attached to the bedpost by a felt-lined clamp and when not in use may be folded and swung to the side.

28 Front Street.

1. Manufactured by Messrs. George Tiemann & Co., 107 East Twenty-Eighth Street, New York.

The Place of Psychology in Medicine.—Psychology needs to be taken into the texture of medical practice and not regarded as an extraneous aid. Its delicate processes, requiring as they do insight and sympathy, find encouragement and balance if they are as the warp to the woof of physical symptoms. Standing apart, psychologic practice may easily fail in acceptance and purpose and even produce antagonism. This is due in part to the outlook of patients and in part to the crudity of many of its exponents. Broadly speaking, patients regard disturbances of mind as things they can, and disturbances of body as things they cannot, avoid. Although neurosis is equally if not more prone to attack the higher type of mind, its diagnosis is apt, in spite of every explanation, to debase the patient and prejudice cure.—Lord Dawson of Penn: Widening Range of Medicine, *Lancet*, Jan. 2, 1926.

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

BERNARD FANTUS, M.D.
Associate Clinical Professor of Medicine, Rush Medical College
CHICAGO

(Continued from page 277)

V. PAINTS AND PENCILS

Paints or pigments are liquids, usually containing highly active ingredients, intended to be painted on the surface. They generally are solutions or suspensions in water, volatile organic solvents, glycerin, or oil. Glycerin is the best vehicle for applications to mucous membranes or raw surfaces, when more prolonged action is desired. For application to the intact skin, volatile organic solvents, such as alcohol, ether or chloroform, are generally preferred. When prolonged action on the skin is aimed at, a substance that leaves a film is added.

One of the chief uses of pigments is for the production of hyperemia. They are also sometimes used as analgesics in neuralgia. Occasionally they are employed for effect on diseased skin, rarely for diadermic action.

The difference between the indications for counter-irritation by means of pigments and of liniments is largely equivalent to the contraindications and indications for massage, and centers chiefly around the fact that the foci of infection must not be rubbed, for fear of disseminating the infection. For such areas, pigments are to be preferred. Tincture of iodine is a good example of a pigment used for this purpose.

When the surface is diseased or ulcerated, massage is also contraindicated; then pigment-like applications are employed. Vulnerary balsams to stimulate healing of ulcers and raw surfaces are of this nature; and the compound tincture of benzoin is an example of such an application. It is similar in composition to the friar's balsam, a healing balsam used by the friars of the middle ages, and justly celebrated in preantiseptic days. Probably better than friar's balsam, because in addition to antiseptic and stimulant action it keeps dressings from sticking, is balsam of Peru, applied full strength or more or less diluted with castor oil, according to the sensitiveness of the surface.

An example of a stimulating pigment for use in chronic skin disease is a mixture of pine tar, or—because it is more elegant—of oil of cade, in varying proportions with alcohol, e. g., 50 per cent each.

An analgesic pigment for the treatment of neuralgia is exemplified by a solution of 4 per cent each of menthol and volatile oil of mustard in alcohol.

Medicated pencils are cylindric medicated bodies or sticks of wood tipped with medicament—as matches are with igniting material—intended for the direct application of medicinal agents to the skin. An example of these is molded silver nitrate, also known as lunar caustic. The National Formulary describes salicylic acid pencils, which are used in dermatologic practice. There are now on the market match shaped

* This is the fifth of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

applicators for iodine, silver nitrate, copper sulphate and alum; these have a good deal to recommend them on the score of portability, cleanliness and convenience of application.

VI. SALVES

Under the heading of salves will be discussed those topical preparations that are characterized by semisolid consistency, so as to be readily spread without previous melting. These characteristics are shared by ointments, pastes and cerates, which differ among themselves in the following manner:

An ointment is a fatty preparation of butter-like consistency, easily applicable to the skin by inunction and liquefying gradually at the temperature of the body.

Pastes are jellies or doughlike applications, either not fatty—containing glycerin with starch, glycerogelatin or some other hydrophil base—or else fatty and containing as much as 50 per cent of powder. The pastes containing powder differ from ointments by having a very slight degree of drying action due to adsorption or capilliarity. They yield medicaments incorporated with them somewhat less readily to absorption than do ointments, and have a more superficial action, but they give better protection. Thus, pastes are especially indicated when it is intended that a therapeutic effect shall be exerted chiefly on diseased epithelium (epidermic action); while in conditions in which the deeper layers of skin are infiltrated or otherwise involved (for endermic action), true ointments should be preferred. These should also be chosen when absorption into the system (diadermic action) is desired.

A cerate is a fatty preparation resembling an ointment, but firmer and of higher melting point (above 104 F.). It is of such consistency that it can be spread without previous melting on muslin or other backing, and yet it will not melt or run through the dressing when applied to the skin. Cerates are used chiefly as protective applications for inflamed or raw surfaces. Their importance is derived largely from the fact that they form a good dressing for ulcers, chiefly by keeping dressings from sticking to the raw surface, an occurrence the importance of preventing which may be appreciated when it is realized that each time a dressing that sticks is pulled off, not only does the patient suffer unnecessary pain, but healing is also disturbed.

Ointments, pastes and cerates constitute an important class of dermatologic preparations, chiefly because a fat or physically similar substance is most suitable for the softening, protecting and soothing of a fatty surface, such as the skin. Nature has provided our skin, exposed as it is to the drying and hardening effects of the air, with an emollient in the fatty secretion of the sebaceous glands; and, whenever this natural fat is deficient, the artificial application of fat is of restorative value. Hence, fats are used extensively in the treatment of skin diseases, especially those of a dry, scaly type. They are also useful to protect healthy skin against excoriation by irritant discharges, to prevent chapping of a delicate skin on exposure to cold winds, and to cover ulcers. Fats generally form the best vehicle for application of medicaments, when we desire penetration of the agent into or absorption from the skin.

These fatty preparations are unsuited, however, for wet surfaces. Whenever an ointment does not stick to the place of application, it not only does no good but is liable to do harm by causing the retention of secretion, which forms a culture medium and thus favors the proliferation of micro-organisms and the consequent irritation of the surface by their poisonous products. In conditions that border on the prohibitive type, pastes, by reason of their slight drying action, may still be useful. When even a paste dressing is found to have been lifted off the surface by secretion, this should be taken as an indication for a different kind of application. So-called cooling salves, being mixtures of fat and water, are more likely to stick to slightly moist surfaces. By reason of the escape of some of the water contained in them and the consequent rendering latent of heat, these preparations have a cooling effect, which antagonizes the feeling of heat, burning and itching of acute dermatoses.

Salves must be perfectly smooth; otherwise they are liable to irritate the skin. Crystalline substances, which by their sharp points and edges might cause multiple minute injuries, just as would powdered glass, should be dissolved in the smallest possible amount of solvent before being incorporated in the ointment. When the active agent is soluble in fat, the ointment should be prepared by fusion; or else the agents should be first dissolved in a small quantity of warm oil, such as castor oil or olive oil, before being incorporated with the ointment vehicle. When the active ingredient is insoluble in fat but is soluble in water, alcohol or glycerin, the smallest quantity of the solvent should be used, the solution being thoroughly incorporated with the ointment vehicle. When the ingredients are insoluble, they must be in a very fine state of subdivision and mixed with the vehicle by thorough rubbing with a spatula on a glass or porcelain slab or in a mortar.

However, these purely pharmaceutic considerations will have to be modified in accordance with the effect desired. When soothing action is the most important point of consideration, they should by all means be complied with. Owing to the physical fact that a substance will not exchange a good solvent for a poor solvent, the activity of the dissolved substance may be greatly reduced or even annihilated.

The total quantity of a salve to be prescribed depends on the time and place of application; thus, eye salves are to be prescribed in quantities of 5 Gm., certainly not exceeding 15 Gm., while other ointments should be given in larger quantities. As comparatively few ointments are absolutely permanent, it is usually not desirable to order more than can be used up in a fairly short time. It may be well to have an idea as to the quantity that will probably be required for various parts of the body. One may estimate that there may be required: for the hand, from 20 to 30 Gm.; for the arm, 50 Gm.; for the leg, from 80 to 100 Gm.; for the head, from 40 to 50 Gm.; for the face, from 20 to 30 Gm.; for the whole body, from 150 to 200 Gm.

For application under a gauze bandage, almost double the quantity will be needed. Pastes are more economical than ointments.

Ointments are dispensed in ointment boxes or in collapsible tubes; it is not necessary to specify which in the prescription, unless the collapsible tube is particularly desired for applications of ointment to the eyelids, the rectum or the urethra.

The directions to the patient should express the quantity (size of millet seed, pea, hazelnut, walnut) or the thickness of the application (one-twelfth or one-sixteenth inch), whether to be rubbed on gently or vigorously, or to be spread on lint, flannel or gauze.

When a surface action is desired, gentle inunction is all that is required. When penetration is aimed at, more or less vigorous friction should be employed. After the ointment has been applied, something generally needs to be done to keep it in place. For pastes, talcum powder or, on exposed surfaces, face powder, may be all that is required; for cerates, gauze; but for ointments, some nonabsorbent material, such as oiled silk or rubber tissue, is necessary; otherwise the covering may absorb more ointment than the skin. To keep an ointment dressing in place, a few strips of adhesive plaster or a roller bandage generally suffice. For the scalp, a rubber bathing cap; for the scrotum, a suspensory bandage; for the hands, cotton or rubber gloves, and for the feet, stockings, are convenient means of retention.

Removal of the salve remnants may be effected by cold cream, oil or gasoline. Frequent or energetic removal is generally not advisable, as it may prove irritative. In general, all that is required is to apply fresh ointment when the covering layer has been shed or rubbed off. Washing with water or soap and water must be prohibited in all acute dermatoses.

SALVE VEHICLES

The chief salve vehicles are petrolatum and wool fat. Lard, by reason of its tendency to rancidity, has largely fallen into disuse.

The most important ointment vehicle is, no doubt, petrolatum. It consists of a mixture of olifatic hydrocarbons obtained from petroleum by distilling off the more volatile products, by separating the substances of higher melting points (paraffin, etc.) by chilling, and by subsequent purification. When the word petrolatum is used without modification, the yellow substance of butter-like consistency is referred to. By decolorizing, a white translucent body is obtained, which is known as white petrolatum. When liquid petrolatum is desired, we must specify it as such. Petrolatum is insoluble in water and alcohol, but is soluble in ether, chloroform, benzine, and in most of the fixed or volatile oils. It is the best vehicle for ointments or pastes, particularly when surface action is desired, chiefly because it cannot become rancid, and because, owing to its chemical indifference, it can be mixed with nearly all kinds of medicaments, even with oxidizing and reducing agents. Though it is believed that most agents penetrate the skin less readily when mixed with petrolatum than when applied with wool fat or lard, it has been shown that volatile substances, such as mercury or methyl salicylate, are absorbed from it quite as well as from other ointment bases. Its chief disadvantage lies in its very slight capacity for absorbing water or alcohol. Hence, when fluid is to be incorporated in an ointment, wool fat or wax mixtures are preferred.

When cerate-like consistency is aimed at, as for the dressing of burns, ulcers and itching surfaces, paraffin may be added. Boric acid (20 per cent) may be incorporated in such an application, but the necessity for it is doubtful. Paraffin, 30 Gm., and petrolatum, 60 Gm., is a useful application for burns; it is spread on gauze, the usual precautions of asepsis being employed. In hot climates more paraffin may be added to make the melting point higher. This mixture, by reason of its permanence, is probably superior to the official cerate, also known as simple cerate, which is benzoinated lard, stiffened by the addition of 30 per cent of white wax. The resin (35 per cent) present in resin cerate makes it somewhat irritative and suitable as a stimulating application to rather chronic ulcers.

Wool fat is available in two forms. The anhydrous wool fat (anhydrous lanolin), which is the purified fat of sheep's wool, a light yellowish, tenacious, unctuous mass with a slight, somewhat unpleasant odor. It is insoluble in water, but is mixable with its own weight of water or glycerin without losing its ointment-like consistency. It is sparingly soluble in alcohol and absorbs alcohol to only a slight degree (about 5 per cent). Wool fat is freely soluble in ether and chloroform. It does not become rancid, unless kept for a very long time. Hydrous wool fat (lanolin) contains from 25 to 30 per cent of water.

Wool fat is particularly valuable as an ointment vehicle for substances, aqueous solutions of which are to be incorporated, and for cooling salves as well. The anhydrous wool fat is used only when the largest possible amount of aqueous fluid is to be incorporated; otherwise it is too tenacious. Even hydrous wool fat is too tenacious, and from one half to one fifth of petrolatum should be added to improve its consistency. Wool fat, on the other hand, is useful to make ointments that are too soft, more tenacious.

These may be considered suitable proportions for a cooling salve: aqueous fluid, 40 cc.; wool fat, 40 Gm.; petrolatum, 20 Gm.

Lard penetrates well and softens at the temperature of the body without becoming fluid. It is important that all lard for medicinal purposes be free from salt and devoid of rancidity. The chief disadvantage of lard is its tendency to become rancid, antagonized to a certain extent by using benzoinated lard, which is lard impregnated with the fat-soluble principles of benzoin by digestion of the benzoin with melted lard. Unfortunately, even this addition does not prevent rancidity; but it may cover up the early manifestations of this change. When fat has become rancid, it is irritating instead of soothing, and may do more harm than good when used on irritated surfaces. As the early stages of rancidity may not be noticeable to the senses or may be covered by benzoination or other perfuming, it is well to know a simple test for rancidity. One mixes the fat with an aqueous solution of potassium iodide. Rapidly occurring discoloration due to liberation of iodine indicates rancidity; its degree can be roughly estimated by the rapidity and degree of this change as compared in a test with a fat, known to be fresh, as a control. Dog's fat, bear's fat, goose grease and other animal fats, notwithstanding the ancient and still existing popular prejudice in their favor, do not present any advantages over lard.

Petrolatum, usually with a stiffening addition of 5 per cent of yellow wax, 20 per cent of wool fat, or 15 per cent of paraffin, has displaced benzoinated lard in most of the official ointments, with the notable exception of stronger mercurial ointment, which is intended for diadermic action, i. e., action after absorption. In it benzoinated lard (stiffened by the addition of an equal amount of suet) has been retained, because it is believed to yield material incorporated with it more readily to absorption. This ointment contains 50 per cent of mercury. Mild mercurial ointment, on the other hand, which is of 30 per cent strength and which is supplied whenever blue ointment is called for, contains petrolatum in addition as a part of the diluent, as it is chiefly used for the extermination of pubic lice, and epidermic rather than diadermic action is aimed at.

(To be continued)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - - Five dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, JANUARY 30, 1926

CRYSTALLINE INSULIN—ANOTHER CHEMICAL TRIUMPH

One of the greatest fields of effort for the constructive chemist is the isolation, study and preparation of pure principles of the organs of internal secretion. An understanding of the action of the important glands in the body is never adequate until the chemistry of the active principle (or principles) is known. Although Schäfer and Oliver, Szymonowicz and Cybulski had noted the presence of a vasoconstrictor principle in the suprarenal glands, the fuller appreciation of the secretion came after Abel had succeeded in isolating epinephrine. Subsequently, its chemical structure was determined and the product prepared synthetically. The science of therapeutics has been benefited immensely by the availability of pure solutions of definite composition.

The researches of E. C. Kendall leading to the isolation and identification of thyroxin have given new insight into the action of the thyroid; like epinephrine, the pure substance is at the disposal of the physician. The artificial preparation of thyroxin is only a question of time and effort, and "one more outpost of the bulwarks of life will thus have been conquered by the chemist."[1] The extract from the pituitary gland is still the subject of attack; steady progress leading to separation and isolation of the pure substance is attested by the reports of Abel and others who have obtained extremely active solutions. The attack on the ovary, particularly the work of Doisy, lends hope that, even for this gland, chemistry will throw much light on its functions as a secretory organ. Following the fundamental researches of others, Collip has succeeded in preparing a solution from the parathyroid containing some substances of marked effect on calcium metabolism. A close parallel to the history of epinephrine is that of insulin. The far-reaching publications of Banting, Best and their co-workers on the preparation and use of active extracts of the pancreas are still fresh in our minds. Pharmaceutic houses have been constantly improving the product; yet none has been unconscious of the presence of undesirable impurities and particularly of the fact that the methods of standardization at best indicate only approximately the relatively minute amount of that chemical which is the ultimate goal.

In a significant address—the sixth annual Pasteur lecture—recently given before the Chicago Institute of Medicine, John J. Abel made public announcement[2] that he had obtained a crystalline form of insulin and exhibited a small specimen of the product. Lantern slide pictures showed the crystals to be rhombohedral, but other data were not presented at that time. The chemical and medical world will await with great interest further developments, particularly the proof of the identification and chemical constitution of the product. The crystallization of the pure principle "insulin," or a compound of it, may well be considered an outstanding accomplishment in the life of a man already distinguished by his conquests in biochemistry. If following this a better method of standardization is worked out, and the product can be prepared synthetically it will have contributed in great measure to the better understanding of modern physiology, to the increased value of medicine, and to a more enjoyable and prolonged life of the patient with diabetes.

1. The Future Independence and Progress of American Medicine in the Age of Chemistry, Report of Special Committee, American Chemical Society.

2. Abel, J. J.: Some Thoughts and Experiments in Relation to the Hormones, Pasteur lecture given before Chicago Institute of Medicine, Jan. 22, 1926.

THE CHEMICAL REGULATION OF RESPIRATION

Breathing is an involuntary act. Though some of the muscles employed in respiration can be called into action by a direct effort of the will, human beings habitually breathe without intervention of voluntary processes; indeed, respiration can proceed, as is well appreciated, in the absence of consciousness and also after removal of the higher cerebral centers. Accordingly, the factors that determine the rate and extent of respiration have long been sought in the organism itself. The discovery of the respiratory center, an important nervous station from which the long known mechanical aspects of breathing are regulated, paved the way for the modern study of the subject. In the earlier period, shortage of oxygen was looked on as the foremost provocative of augmented respiration. On superficial examination, there is much to commend this view. When the external oxygen supply is reduced, vigorous respiratory efforts are soon initiated, as one may observe in the severe dyspnea of oxygen want.

Twenty years ago, Haldane and Priestly, in England, demonstrated the extreme sensitiveness of the respiratory center to changes in the tension of the alveolar

carbon dioxide. As a consequence it was soon assumed that the regulation of respiration, meaning by that the amount of ventilation per unit of time, or the total volume of air sent in and out of the lungs, is affected by the carbon dioxide tension of the arterial blood, which is the same as that of the alveolar air of the lungs. The reaction is so sensitive that under extreme conditions the concentration of carbon dioxide in the alveolar air is actually kept nearly constant. Thus, in muscular exercise when there is a large output of carbon dioxide into the blood, the regulatory adjustment functions promptly through augmented breathing. The question has arisen as to whether the carbon dioxide acts directly or in virtue of its effect in increasing the acidity or hydrogen ion concentration of the blood. A recent reviewer [1] of the extensive literature on the subject has pointed to the present generally accepted belief that the hydrogen ions of the arterial blood stimulate the respiratory center, thereby controlling its activity, and that pulmonary ventilation is so regulated as to maintain a constant hydrogen ion concentration of the arterial blood. This view rests primarily on the work of Haldane and his associates, of Winterstein and of Hasselbalch. The conception has found widespread acceptance in the interpretations of the pathologic manifestations of respiration. Thus, Means,[2] in his review of dyspnea, states that "ordinarily carbon dioxide plays the major rôle in regulating the respiration, and the rate of ventilation is adjusted to the carbon dioxide requirements. For purposes of oxygen absorption alone, the ventilation is ordinarily in excess." He believes that "sufficient pulmonary ventilation must be supplied to remove the carbon dioxide produced by metabolism, but at the same time its rate of removal must be so adjusted to its rate of addition to the blood that its tension will bear a nearly fixed ratio to the blood bicarbonate, this in order that the blood may be kept from more than slight alteration."

We are indebted to Gesell among others for having pointed out numerous evidences of lack of correspondence between the activity of arterial and respiratory activity. Even granting that the acidity of the blood or of the center is the regulative stimulus, as he remarks, it would be exceedingly remarkable if the behavior of the center were not modified in other ways. Accordingly, Gesell has directed his attention to metabolic changes within the respiratory center itself, reaching the tentative conclusion that changes in the acidity of the latter constitute the primary chemical control of respiration. His latest contribution [3] stresses the importance of the production of lactic acid in the brain itself. The experimental tests demonstrate, first of all, a high normal lactic acid content in that organ. Lack of oxygen leads to increased cerebral lactic acid without indication of any intervening latent period between the anoxemia and the onset of acid accumulation. Gesell rejects the theory that carbon dioxide is the "normal" regulator of respiration, and that lack of oxygen is the "abnormal" stimulus operating only under conditions of stress. He believes that the new data support the view that lactic acid is an important regulator of respiration. This, Gesell adds, is tantamount to saying that oxygen regulates respiration indirectly by determining the amount and kind of acid formed within the respiratory center. Evidently, to quote Yandell Henderson, there still are many phenomena that require to be considered, explained and harmonized before the behavior of the hematorespiratory functions in health and disease can be regarded as solved. For the present, both the hydrogen ion concentration of the blood and the changes in the respiratory center itself furnish the chief items for critical discussion.

1. Gesell, R.: The Chemical Regulation of Respiration, Physiol. Rev. **5**: 551 (Oct.) 1925.
2. Means, J. H.: Dyspnea, Medicine **3**: 309 (Aug.) 1924.
3. McGinty, D. A., and Gesell, R.: On the Chemical Regulation of Respiration, II, A Quantitative Study of the Accumulation of Lactic Acid in the Isolated Brain During Anaerobic Conditions, and the Rôle of Lactic Acid as a Continuous Regulator of Respiration, Am. J. Physiol. **75**: 70 (Dec.) 1925.

THE PARATHYROID HORMONE—A WARNING

At present the preponderance of opinion with respect to the parathyroid structures makes them responsible for the elaboration of a hormone having to do normally with the regulation of calcium metabolism through a specific control of the concentration of the element in the circulating blood.[1] This view has been rendered highly plausible by the recent well substantiated demonstrations of the preparation of extracts from the parathyroid tissue that have the potency of raising the concentration of the circulating calcium. They are effective in replacement therapy after the otherwise fatal complete parathyroidectomy. Parathyroid tetany and a low level of blood calcium have long been recognized as coincident phenomena. Both can be respectively relieved and raised by administration of calcium salts; likewise by the use of preparations containing the parathyroid hormone.

As might be expected, such experimental studies in this field have promptly given an impetus to the discovery of possible clinical applications. Collip [2] has sounded the keynote by reminding us that calcium metabolism enters into many medical problems. An agent is now at hand, he adds, which influences profoundly the calcium metabolism. It must be recognized, however, that the parathyroid hormone is a most potent therapeutic agent and that its use may be attended with great danger unless due precautions are taken to avoid an overdose and the development of

1. The Parathyroid Hormone, editorial, J. A. M. A. **84**: 1499 (May 16) 1925; The Parathyroid Hormone—Retrospect and Prospect, ibid. **85**: 118 (July 11) 1925.
2. Collip, J. B.: The Extraction of a Parathyroid Hormone Which Will Prevent or Control Parathyroid Tetany and Which Regulates the Level of Blood Calcium, J. Biol. Chem. **63**: 395 (March) 1925.

hypercalcemia. It may be that a condition of mild hypercalcemia would be of definite benefit in certain conditions. Only by careful clinical studies, however, will the ultimate merits or demerits of this hormone be determined.

More recently, Collip's warning against any but the most careful and discriminating clinical use of parathyroid extract has been sounded anew by Greenwald and Gross [3] of the Harriman Research Laboratory at the Roosevelt Hospital, New York. It is their belief that the parathyroid hormone facilitates the solution of calcium phosphate. By what means this happens is not yet determined. In their tests on animals practically deprived of calcium in the food, the calcium content of the blood was nevertheless increased through the use of the parathyroid hormone. This, Greenwald and Gross remark, must have been at the expense of certain tissues. Since the increased excretion of calcium was regularly accompanied by an approximately equivalent increase in the excretion of phosphorus, it is not unreasonable to assume that both calcium and phosphorus were derived from bone, particularly since there seems to be no other tissue that could supply the large amounts lost. According to the New York biochemists, excess of parathyroid secretion leads to excessive solution of calcium phosphate from the bones and, possibly, other tissues, and to an increase in the concentration of both calcium and phosphate in the blood. The kidneys speedily remove the excess of the latter, so that the increase may be too slight to be detected by our present methods. The increase in the concentration of calcium is much more evident. Both substances are excreted in increased amounts and in approximately equivalent proportions. Hence the timely significance of the reminder that those who venture to use parathyroid extract clinically should clearly understand that the hypercalcemia it induces is not due to improved assimilation but is the cause of an increased loss of calcium. It is not to be used to promote calcium assimilation, for only the contrary result is to be anticipated.

DRIED HUMAN MILK

If it is true, as one reads so frequently in the discussions of human welfare, that the chances of a long and healthy life are immensely greater for the breast-fed baby than for the child who must be fed artificially,[4] the medical profession cannot disregard the challenge. Furthermore, if it is demonstrably certain that in case of misfortune depriving the child of its natural food supply the best substitute is the milk of some healthy woman with a baby of approximately the same age, a specific problem looms before the pediatrician. The service of the wetnurse is familiar in the history of infant feeding. The expense, shortcomings, difficulties and limitations of securing the cooperation of a "physiologic foster mother" are not far to seek, though it should be freely admitted to the glorification of motherhood that many women have in the past served splendidly as wetnurses for sentimental reasons and without thought of remuneration. However, infant feeding should be a matter of principle and not of impulse or sentiment.

In evident recognition of this situation is the more recent so-called commercial production of human milk and distribution in suitable containers. An effort in this direction was reported last year by Hoobler [5] of Detroit. Reviewing his observations over a period of ten years, he concluded that the efforts have passed through the experimental stage, though they cannot be said to have reached a dividend paying basis, unless one is content to count as such dividend the life saving qualities this commodity is known to possess when given to certain sick or premature infants. The Detroit experiment is only an illustrative instance of what has been attempted in various centers in this country with more or less success.[6]

The evolution of the milk industry, in the case of cow's milk, has included notable achievements. A regularity of distribution and an uninterrupted availability were assured long ago. Pasteurization and the production of certified products introduced factors of bacteriologic safety into a wholesome product of great nutritive value. The conservation of milk in various ways has long concerned the dairy industry, desiccation being the latest of the procedures to attain widespread recognition. Through the increasing perfection of dried milks the consumer has become independent of time and place, so that convenience and possibilities of deterioration are placed in a new light. Much of the criticism leveled at the earlier products, such as the destruction of vitamins through the desiccation process, is no longer warranted, owing to improvements in the methods of manufacture. At the present moment, indeed, the use of dried milks for infant feeding is not without some vogue. It is interesting, therefore, to learn that conservation by drying has been attempted with human milk.[7] The practicability was first established by animal feeding experiments which showed that suitably dried breast milk may retain at least three fourths of its antiscorbutic potency; and even after long "aging" the latter need not be entirely lost. The crucial test, on infants, has

3. Greenwald, I., and Gross, J.: The Effect of the Administration of a Potent Parathyroid Extract on the Excretion of Nitrogen, Phosphorus, Calcium and Magnesium, with Some Remarks on the Solubility of Calcium Phosphate in Serum and on the Pathogenesis of Tetany, J. Biol. Chem. **66**: 217 (Nov.) 1925.

4. Rose, Mary S.: Feeding the Family, New York, the Macmillan Company, 1924, p. 109.

5. Hoobler, B. R.: Human Milk, J. A. M. A. **84**: 165 (Jan. 17) 1925.

6. Compare, for example, Another Mother's Milk Station, J. A. M. A. **85**: 1648 (Nov. 21) 1925.

7. Emerson, P. W.: The Collection and Preservation of Human Milk, J. A. M. A. **78**: 64 (March 4) 1922. Smith, L. W., and Emerson, P. W.: Notes on the Experimental Production of Dried Breast Milk, Boston M. & S. J. **191**: 938 (Nov. 13) 1924. Smith, L. W.: The Experimental Feeding of Dried Breast Milk, J. Biol. Chem. **61**: 625 (Oct.) 1924. Emerson, P. W.: Dried Human Milk, IV, Dried Human Milk as a Food for Infants, Am. J. Dis. Child. **30**: 769 (Dec.) 1925.

just been reported by Emerson[7] of the Boston Floating Hospital. He states that human milk, in dried form, with an average age of 100 days, has been acceptable to a small group of babies as a food. As might be anticipated, a perfect outcome has not yet been secured. One would scarcely expect an immediate panacea in the form of a single experimental product. The technical difficulties are admittedly large. Nevertheless, the new undertaking deserves attention as an effort in a promising direction. Dried human milk may become a successful reality.

Current Comment

THE "ETHYL" (TETRA-ETHYL LEAD) GASOLINE REPORT

A few years ago research chemists, working in the interest of the motor industry, found that the addition of "tetra-ethyl lead" in concentrations of about 1 part to 1,500 of gasoline permitted the use of "lower test" gasoline, a matter of economic importance. By decreasing the velocity of reaction of combustion it eliminated "the knock." About two years ago the product was made commercially available under the name of ethyl gasoline, and more than three hundred million gallons was sold in a short time. This necessitated large scale manufacture of the organic lead compound, which was undertaken both in Ohio and in New Jersey; in spite of certain precautions and preventive measures instituted by the manufacturing plants, a number of workmen succumbed to the effects of tetra-ethyl lead. This created a feeling of uneasiness among public health officials concerning the possible hazards to the public arising from its use. A conference was called last May by Surgeon General Cumming to consider the problem. As a result, a special committee was appointed by the Surgeon General to investigate the hazard to the public by the use and distribution of the so-called ethyl gasoline; in the meantime the manufacturers withdrew the product from the market, awaiting the decision of the committee. Elsewhere in this issue[1] appears an account of the committee's report. Essentially the conclusions of the committee are that there was no evidence of poisoning from the use of ethyl gasoline as a motor fuel (as distinct from the manufacture and distribution of the product), and that drivers of cars using ethyl gasoline showed no signs of undue lead absorption. Probably the most surprising feature of the report is that in the controls, who were not exposed directly to ethyl gasoline, lead was found as a constituent of the feces. The explanation of the genesis of the lead is not given; this is an important point and will probably be cleared up by future investigations. The committee concludes that there is no valid reason why the sale and use of ethyl gasoline should be prohibited, provided its distribution and use are controlled by proper regulations; but it does emphasize that the manufacture and blending of tetra-ethyl lead require strict regulation. Lead has been known as an iniquitous poison because of its cumulative effect ever since the days of the early Romans. The committee itself realizes the experience of the past, and points out that the conclusions are open to criticism because they have been derived from the study of a relatively small number of persons who were exposed to the effects of ethyl gasoline for a comparatively brief period. If the use of leaded gasolines becomes widespread, conditions may arise that would render its use more of a hazard than would appear from this investigation. Longer experience may show that even such slight storage of lead as was observed in these studies may lead eventually in susceptible persons to recognizable lead poisoning or to chronic degenerative diseases of a less obvious character. In view of such possibilities, the committee feels that the investigations begun under its direction must not be allowed to lapse. In the meantime, as THE JOURNAL stated previously,[2] physicians should consider the possibility of lead poisoning in persons who may have been exposed even slightly to "ethyl gas" fumes, even though the evidence thus far presented is negative.

1. Committee Report on Ethyl Gasoline, this issue, p. 370.

THE CIRCULATION AND CARBOHYDRATE UTILIZATION

Since the discovery of insulin and the better appreciation of how it may function in the organism, the interpretations of apparent disorders of carbohydrate metabolism have been revised. It has been recognized for some time that different persons show considerable variations in their response to the ingestion of liberal doses of sugar, such as 100 Gm. of glucose used in the so-called test of sugar tolerance. In some cases the resultant hyperglycemia is attended by an outpouring of sugar in the urine. But the level of sugar content in the circulating blood may far surmount the normal in such tests without any glycosuria attending the induced hyperglycemia. Conditions of hyperglycemia are observed not only in pancreatic disease, notably in outspoken diabetes, but also to a more moderate extent in nephritis and in hyperthyroidism. Of late, the exaggerated and prolonged hyperglycemia observed in persons with a low sugar tolerance has usually been ascribed to a deficit of insulin which is depended on to effect the disposal of sugar from the blood. Recent investigators[3] have pointed out, however, that another possibility is to be considered. Since muscle tissue seems to be a prominent site for removal of sugar from the blood, interference with the blood supply to muscle masses might be expected to alter the rate at which sugar leaves the blood. Considerable justification for this thesis is afforded by the studies of Cajori, Crouter and Pemberton[3] at the Presbyterian Hospital in Philadelphia. They have observed that by interfering with

2. Tetra-Ethyl Lead—Another Industrial Hazard, editorial, J. A. M. A. **83**: 1511 (Nov. 8), 1924.

3. Cajori, F. A.; Crouter, C. Y., and Pemberton, Ralph: The Effect of Changes in the Circulation on Carbohydrate Utilization, J. Biol. Chem. **66**: 89 (Nov.) 1925.

the blood supply to large muscle masses through elevation of the legs and one arm, an exaggerated and prolonged hyperglycemia can be induced in some persons. These facts are interpreted as indicating that the rate at which sugar leaves the blood after glucose ingestion can be influenced by the character of blood supply to tissues active in sugar removal. One is reminded of the circumstance that a low sugar tolerance has been noted in certain cases of arthritis [4] in which conditions may exist that permit the blood to pass through large masses of muscle with less change in chemical composition than usually takes place. Such mechanical factors should hereafter be taken into consideration in interpreting the nature of a low sugar tolerance.

Association News

DELEGATES PLEASE NOTE

Section 2 of the report of the Reference Committee on Reports of Officers, submitted to the House of Delegates at the Atlantic City Session, was as follows:

"Your committee also endorses the suggestion of the President and the Speaker that the House should adopt a plan whereby a more thorough consideration may be given to important measures before they are acted on finally by the House. The various councils of the Association are deliberative bodies, but the policies recommended by them should be considered carefully by reference committees before being accepted by this House. Your committee therefore, offers the following resolution:

"Resolved, That all reports of officers, Councils or standing committees of this Association, and all resolutions dealing with questions of policy of the Association, shall be filed with the Secretary of the Association sixty days in advance of the annual session of this House, published in the *Bulletin*, and mailed to every delegate at least thirty days before the annual session at which such resolutions or reports are to be considered."

After thorough discussion, this matter was referred to the Board of Trustees. At the meeting of this Board, held in Chicago, Sept. 4, 1925, it was decided that effort should be made to have the recommendations of the reference committee carried out this year.

To this end, it is desired that members of the House of Delegates who intend to introduce resolutions "dealing with questions of policy of the Association" at the Dallas Session will send copies of such resolutions to the secretary of the Association on or before Feb. 19, 1926. Such resolutions can then be published in THE JOURNAL and in the *Bulletin* during the month of March and, in this way, can be brought to the attention of delegates and members of the Association generally for careful consideration.

THE DALLAS SESSION

The Scientific Exhibit

The Committee on Scientific Exhibit calls attention to the fact that all applications for the Scientific Exhibit must be in the hands of the director before February 15. Any who desire an application blank may obtain it by sending a request addressed to Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago. From the applications received so far, the exhibits at the Dallas Session promise to be of great scientific value and interest.

Applications for the special exhibit on cancer by the Section on Dermatology and Syphilology should be sent before February 6 to Dr. I. L. McGlasson, 817 City National Bank Building, San Antonio, Texas.

4. Pemberton, Ralph; and Foster, G. L.: Studies on Arthritis in the Army, Arch. Int. Med. **25**: 243 (March) 1920.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Greeks Found Sanatorium.—The Greek residents of Little Rock and Hot Springs have been granted a charter for the erection of a modern sanatorium at Hot Springs, to be known as the "Asclepios Sanatorium" and to cost $250,000.

Personal.—Dr. John C. Hughes has been appointed city health officer of Hoxie, to succeed the late Dr. Earl Thomas. ——Dr. Roland N. Smith, Augusta, has been appointed physician to the Arkansas Boys' Industrial School, Pine Bluff.

CALIFORNIA

Pharmacist Arrested.—G. D. Johnson, a pharmacist of Stockton, was arrested, January 4, it is reported, on charges of performing an illegal operation and of practicing medicine without a license; he was released on $2,000 bail.

Society News.—Dr. Williams M. Marriott, St. Louis, will address the San Diego County Medical Society, San Diego, February 9, on "Some Newer Viewpoints Concerning the Nature and Treatment of Nephritis," and Dr. William C. MacCarty, Rochester, Minn., February 2, on "Gastric Ulcer and Carcinoma."

Personal.—Dr. John M. Scanland has resigned as superintendent of the Napa State Hospital for the Insane, Napa, and will engage in practice in San Francisco. Dr. Scanland was also formerly superintendent of the state hospital at Warm Springs, Mont.——Dr. Samuel B. Richards has been appointed deputy county health officer for Victorville.——Dr. Thomas O. Burger, San Diego, has been elected president of the staff of Mercy Hospital for 1926.

CONNECTICUT

Board of Healing Arts.—The members of the State Board of Healing Arts of Connecticut are Charles M. Bakewell, Ph.D., professor of philosophy, Yale University, New Haven, and former state senator; Ernest W. Crist, New Britain, former state representative, and Rollin U. Tyler, Deep River, judge of probate for his district. In compliance with a recent law, the board examines in anatomy, physiology, hygiene, pathology and diagnosis those applicants who desire to be licensed in the state to practice the healing arts; those who pass the examination receive a certificate which permits them to appear for examination before a licensing board. The board of healing arts acts also as a grievance committee to hear complaints against persons practicing the healing arts (THE JOURNAL, Aug. 29, 1925, page 683).

DISTRICT OF COLUMBIA

Undertakers as Neighbors.—The Medical Society of the District of Columbia announced, January 16, according to the Washington Post, a campaign to prevent undertakers from locating their establishments in Washington in the vicinity of physicians' office buildings. Learning that an undertaking firm proposed to locate at 1623 Connecticut Avenue, N. W., the society held a special meeting at which a resolution was adopted, which, among other things, stated that the locating of undertaking establishments in the vicinity of physicians' offices would have a most injurious and detrimental effect on the health of patients visiting those offices. The legal advisory committee of the society was directed to take all proper steps to carry out the intent and purpose of the resolution. The Washington Post said that the action taken by the medical society was probably the first time that it has ever ventured in civic matters. It appears that the zoning regulations of Washington force physicians to conduct their offices largely in the district known as the "first commercial district." The society favors the exclusion entirely from that district of undertaking establishments or funeral parlors.

FLORIDA

Laymen Board of Health.—According to the Brooksville *Herald*, the mayor of that city has appointed a new board of health comprising an engineer, Mr. F. S. Parrigin; a clergyman, Rev. J. C. Hill; an attorney, John Whitehurst; a repre-

sentative of the women of the city, Mrs. Isom Beasley, and a representative of the business interests of the city, Mr. J. H. Murphy.

State Board Will Not Quarantine Smallpox.—For the information of the public, the Florida State Board of Health gave out, January 8, a resolution concerning smallpox, which was adopted by the board in 1921, and still is in effect. It is as follows:

WHEREAS, The majority of smallpox cases occurring in the state are not seen or diagnosed by a physician, and

WHEREAS, The quarantine or isolation of the relatively few known cases of the disease gives the public a false sense of security, now therefore, be it

Resolved, That the State Board of Health of Florida hold every individual or citizen responsible for the prevention of smallpox in himself or immediate family and that the public be advised that such prevention can be obtained on application to the state board of health for smallpox vaccine. Be it further

Resolved, That the State Board of Health of Florida furnish free vaccine to any citizen of the state and wherever an epidemic of smallpox is threatened it make every effort to detail a district health officer to the infected community to give free vaccine to the public. Be it further

Resolved, That the State Board of Health of Florida will not quarantine smallpox nor will it be responsible for the treatment, maintenance or sustenance of any case of smallpox occurring within the limits of the state.

GEORGIA

Society News.—Dr. and Mrs. Thomas C. Davison, Atlanta, gave a dance at their home, recently, in honor of the newly elected officers of the Fulton County Medical Society. ——Dr. Theodore Toepel addressed the Fulton County Medical Society, January 21, at the Academy of Medicine, Atlanta, on "Influence of Posture on the Development of the Child"; Dr. Rufus T. Dorsey, on "Tularemia," and Dr. James L. Campbell, on "Medical History as an Inspiration to the Professional Career."——The Thomas County Medical Society held a clinic at the John D. Archbold Memorial Hospital, Thomasville, Dec. 10, 1925, assisted by members of the staff of the University of Georgia Medical College.——Dr. Edgar R. Pund, Augusta, recently addressed the Richmond County Medical Society on "The Occurrence of Malignant Tumors In and About Augusta."

Personal.—Dr. J. E. Lester, Kennesaw, has been appointed health officer of Cobb County to succeed Dr. Leonard L. Welch, who resigned to engage in private practice.——Dr. Alexander H. Beazley, Crawfordville, has been appointed county physician to succeed Dr. John A. Rhodes, resigned. ——Dr. William I. Hailey, Hartwell, has been elected mayor of that city.——Dr. Carl C. Aven, Atlanta, who has been succeeded as chief of the staff by Dr. Zachary S. Cowan, was presented with a watch by the Tuberculosis Association of Atlanta.——Dr. Emile O. Scharnitzky, Augusta, has been elected to the executive board of the Prison Physicians' Association of America.——Dr. Charles L. Ridley, health officer of Macon and Bibb County, has been elected superintendent of the Macon Hospital.

ILLINOIS

Chiropractors Close Offices.—Following a visit from the state inspector, Don Dickson and Hanson Dickson, chiropractors of Lewistown, closed their offices, January 13, it is reported.

Physician Sentenced.—Dr. Don V. Poindexter, Greenville, was sentenced, January 4, it is reported, to serve one year and a day in the federal penitentiary at Fort Leavenworth, Kan., after having pleaded guilty to a charge of violating the Harrison Narcotic Law.

Quarantine Rules Revised.—The regulations for the control and prevention of pneumonia in Illinois have been completely revised by the state department of health; copies of the new rules have been placed in the hands of local health officers. The new regulations can be obtained on request to the board at Springfield.

Personal.—Dr. Charles W. Pfeiffer, Quincy, was elected president of the staff of St. Mary's Hospital at the annual election, Dec. 30, 1925.——Dr. Harry C. Moss, Carbondale, has been appointed acting division surgeon of the St. Louis Division of the Illinois Central Railroad.——Dr. Henry P. Carr of the International Health Board, New York, is on temporary duty with the state department of health investigating the prevalence of malaria in the southern part of the state to determine to what extent mosquito eradication may be employed practically as a health measure; he will work mostly in the rural districts.

Cost of Being Born.—It is safe to place the minimum average cost of being born in Illinois at $150, according to the state health director. Illinois pays annually, it appears, about $20,000,000 for obstetric nursing and hospital care for maternity patients. It is estimated that more than 40 per cent of the 140,000 annual births in the state occur in hospitals. Maternity hospitals are growing in favor with the public, and local communities have organized infant and child study clubs "by the score." A new movement in this field is that of the American Association of University Women, which is establishing child study clubs throughout the country under the management of qualified leaders; a number have been started in Illinois.

Chicago

Pasteur Lectures.—Dr. John J. Abel, Johns Hopkins University Medical School, Baltimore, gave the sixth Pasteur lecture before the Institute of Medicine of Chicago, January 22, at the City Club, on "Some Thoughts and Experiments in Relation to the Hormones." There was an informal dinner preceding the meeting. The previous Pasteur lectures were delivered by Graham Lusk, D.Sc., Dr. Theobald Smith, Dr. Jacques Loeb, Dr. Otto Folin, and Dr. William H. Howell. The next meeting of the institute will be February 26.

Hospital News.—Passavant Hospital will build a new home, costing one and a half million dollars, on the McKinlock campus of Northwestern University on the lake front near Chicago Avenue; the site has been given to the hospital by the university for ninety-nine years; one third of the beds of the new institution will be set aside for Northwestern University Medical School for clinical instruction.——Ground has been broken for the erection of a four-story addition to the American Hospital, Irving Park Boulevard and Broadway. ——The Illinois Masonic Hospital, Chicago, has let contracts for a seven story addition to cost $200,000.

Personal.—Dr. Malcolm T. MacEachern is in New Zealand studying the hospitals of that country and Australia; he will attend the International Hospital Conference and the annual meeting of the New Zealand Branch of the British Medical Association in February, and return to the United States in April.——Dr. Irving F. Stein has been elected president of the Michael Reese Ex-Interne Alumni Association.—— Dr. Elven J. Berkheiser has been appointed attending orthopedic surgeon to the Children's Memorial Hospital.——Professors Anton J. Carlson and Arno B. Luckhardt of the physiology department, University of Chicago, have been elected foreign members of the Deutsche Akademie der Naturforscher, Halle, Germany; founded in 1652. This society has had among its foreign members Charles Darwin, Thomas Huxley, Louis Agassiz and S. J. Meltzer.

INDIANA

Measles at Indianapolis.—Two deaths from measles had been reported to the board of health at Indianapolis up to January 12, when forty new cases were placed under quarantine, bringing the total number of cases reported in January to 269.

State Board Officers Reelected.—Dr. William A. Spurgeon, Muncie, was reelected president of the state board of medical registration and examination, January 12; Dr. Eldridge M. Shanklin, Hammond, vice president; Dr. William T. Gott, Crawfordsville, secretary, and Dr. Jesse W. Bowers, Fort Wayne, treasurer.

Society Clinics.—The Tippecanoe County Medical Society gave a banquet, January 15; Dr. William R. Cubbins, Chicago, gave an address on "Acute Intestinal Obstruction," and in the afternoon held a diagnostic, surgical clinic. The next meeting, February 11, will be a joint meeting with the dentists. William H. G. Logan, M.D., D.D.S., will conduct a surgical clinic at St. Elizabeth's Hospital in the afternoon.

Investigation of Absentees in Epidemic.—To determine the extent of the present scarlet fever epidemic, Evansville has instituted a plan of investigating why children are absent more than one day and of requiring them to have a physician's certificate before returning to school; sixty cases of scarlet fever are said to have been discovered in this manner. There are said to have been 155 cases under quarantine in Evansville, January 16. The extension of this plan to factories and office buildings is under consideration.

IOWA

Dispensary Board Appointed.—The Woodbury County Medical Society at a special meeting, January 13, appointed a board of directors as the initial step toward the incorporation of a new free medical dispensary in Sioux City. The members of the board are Drs. Foster Victor Brown, Frank L.

Secoy, Willard F. Conley, James Christensen and John A. Thomson; the lay members elected were Mr. Dave Davidson and Mr. R. J. Andrews.

LOUISIANA

Annual Physical Examination for State Board Employees.——The president of the state board of health announced, January 16, that the employees of the board in the future must undergo an annual physical examination; the measure was adopted by the board in view of its policy advocating physical examinations for the public.

Special Medical Meeting.—The dean of Tulane University of Louisiana School of Medicine announced a special medical meeting to be held in the Hutchinson Memorial Building, January 15, to which physicians were invited. Dr. William T. Councilman, emeritus Shattuck professor of pathologic anatomy, Harvard University, Boston, gave an address on "Medicine in China"; Dr. Aldo Castellani, recently appointed head of the department of tropical disease at Tulane, spoke on "Tropical Diseases."

Personal.—Dr. Philip H. Jones, Jr., has been appointed house medical officer at the Charity Hospital, New Orleans, to succeed Dr. Dale D. Corrington, who resigned to engage in practice in St. Petersburg, Fla.——Dr. John H. Musser, professor of medicine, Tulane University of Louisiana School of Medicine, New Orleans, gave a dinner, January 16, at the Luisiane in honor of Dr. Richard M. Pearce, New York.——Mr. W. H. Lackey, Bureau of the Census, Washington, D. C., is in New Orleans checking the death reports of the state board of health; Louisiana was admitted to the death registration area in 1918.

MARYLAND

Dr. Lewis Honored.—A dinner of welcome in honor of Dr. Dean Lewis, surgeon in chief, Johns Hopkins Hospital, was given at the Alcazar, Baltimore, January 21, by members of the surgical staff of the hospital. Among those who accepted invitations to the dinner were friends of Dr. Lewis from various parts of the country. The speakers were Frank J. Goodnow, LL.D., president of the Johns Hopkins University; Dr. Harvey Cushing, Boston; Dr. Harvey B. Stone, Baltimore, and Daniel Willard, president of the Baltimore and Ohio Railroad and chairman of the Johns Hopkins half-century committee.

Rural Community Wants Physician.—In southern Dorchester County, on the eastern shore of Maryland, a community estimated at 3,000 people has no physician. According to residents of Wingate, several persons have suffered severely recently, because of the difficulty of getting medical aid from Cambridge, 25 miles away. More than 100 residents of the section have circulated a petition, and advertised in the papers for a resident physician. The section is said to be prosperous, the residents being mostly farmers and fishermen. Dr. Patrick H. Tawes, who retired about three months ago, practiced here for many years.

Society News.—Dr. Robert H. Riley, chief, bureau of communicable diseases, state department of health, addressed the Baltimore County Medical Association, January 20, as retiring president, on "The Achievements of Preventive Medicine in Reducing Communicable Diseases and the Application of Such Knowledge to Diseases of Middle Life." The new officers of the society are: Dr. William Rush Dunton, Jr., president; Dr. Edward H. Benson, vice president, and Dr. Walter M. Carmine, secretary-treasurer.——The surgical staff of the University Hospital, Baltimore, gave a testimonial dinner in honor of Dr. W. Wayne Babcock, professor of surgery and clinical surgery, Temple University School of Medicine, Philadelphia, at the Baltimore Club, January 11. Dr. Babcock gave an address at the University of Maryland on "A New Operation for Thoracic Aneurysm."——Dr. Jacques E. Forestier, Paris, France, discussed the use of iodized oil (lipiodol) in roentgen-ray examinations, January 21, at a meeting of the Baltimore City Medical Society.

MASSACHUSETTS

Personal.—Joseph Bequaert, Ph.D., has been promoted to an assistant professorship of entomology, and Donald L. Augustine, Sc.D., to assistant professor of helminthology at Harvard University Medical School, Boston.

Society News.—Dr. Joseph F. Montague, New York, formerly president of the American Proctological Society, addressed the Berkshire District Medical Society, Pittsfield, January 14, on "Office Methods of Rectal Surgery."

License Revoked.—The secretary of the board of registration in medicine reports that the registration of Dr. Catherine White Castle, Boston, was revoked, Nov. 6, 1924, as a result of conviction on the charge of criminal abortion, and that she was sentenced to the Sherborne Reformatory for women.

Changes in State Board.—The secretary of the board of registration in medicine writes that Dr. Charles E. Prior, former secretary, is now chairman, taking the place of Dr. Samuel H. Calderwood, Malden, and that Dr. Charles P. Sylvester, Boston, has been appointed a member of the board.

MINNESOTA

Diphtheria Immunization in Martin County.—With the cooperation of physicians, about 90 per cent of the school children of Martin County have been immunized against diphtheria by means of toxin-antitoxin; 100 per cent of the children have been immunized in some schools, and the work is still being done in other schools. The total number immunized by January 1 was about 2,300. The cost in each case is about $1.10, of which the physician receives about 84 cents and the county health association, 10 cents; the material costs 16 cents. Martin County is said to lead the state in this work.

MONTANA

Personal.—Dr. Duncan S. MacKenzie, Havre, has been appointed county health officer of Hill County, and Dr. Ellsworth M. Burke county physician.——Dr. Ferris L. Arnold, Billings, has been appointed liaison officer for the medical reserve corps in Eastern Montana and Wyoming; he will answer inquiries, and help in other ways, medical reserve officers or units in that district. Captain Arnold has been active in procuring the personnel for General Hospital no. 145, which has been assigned to Billings.

NEW YORK

Dr. Weiskotten Appointed Health Commissioner.—Dr. Herman G. Weiskotten, acting dean and professor of pathology at Syracuse University College of Medicine, has been appointed commissioner of health of Syracuse to succeed Dr. Thomas P. Farmer, who resigned to devote his time to private practice.

Nurses for Putnam County.—The board of supervisors of Putnam County, which has a total population of less than 11,000 persons, appropriated, Dec. 9, 1925, $7,200 for nursing service in the county, and will employ six public health nurses to cover the whole county, whereas in the past only three towns employed nurses; they will do public health work, school nursing and some bedside nursing.

Poliomyelitis Outbreak Traced to Milk.—The outbreak of infantile paralysis in Cortland, which amounted to ten cases, has been definitely "traced to milk," according to the New York State Department of Health. The outbreak occurred in December, 1925, and all except one of the cases had been associated with the consumption of milk from the same dealer. An investigation at the dairy failed to disclose any evidence of illness among the cows except that five reacted to the tuberculin test.

Typhoid Outbreak in Erie County.—Thirty-four cases of typhoid have been reported at Lackawanna and neighboring communities in Erie County since Dec. 14, 1925. The state department of health has learned in connection with this outbreak that last fall there were six deaths from enterocolitis in a children's institution in Lackawanna, and that many cases of so-called intestinal influenza occurred in November and December in some municipalities where there is now typhoid. A filtration plant is expected to be completed by April. The eight communities now affected obtain their water supply from Lake Erie.

New York City

Laymen Admitted as Associate Members.—The Kings County Medical Society adopted an amendment to its constitution and by-laws, January 19, which provides that laymen interested in science or in the service to the public of that society, or members of professions allied to medicine may become associate members of the society. The amendment was adopted by an overwhelming vote, according to the New York *Times*. A similar regulation is said to be in effect in the Philadelphia County Medical Society; with that exception the provision is said to be unique in that part of the country.

Foundation for Study of Heart Disease.—It was announced, January 10, at the annual dinner of Beth David Hospital, that Jacob Witkin has donated a large sum to establish a foundation for the study and prevention of heart disease, which will be a memorial to his wife, and which will be known as the Witkin Foundation. Dr. Albert S. Hyman, chief of the cardiac clinics at the Beth David Hospital, has been elected director of the foundation and the work will probably start immediately. It will cooperate, says the *New York Medical Week*, with the American Heart Association and the Association of Cardiac Clinics. Physicians are requested to submit interesting cases and problems to the director.

Society News.—Dr. William L. Rost, president, Bronx Pediatric Society, addressed the society, January 13, on "Excessive and Prolonged Milk Diet as a Factor in the Malnutrition of the Pre-School Child."——The possibility of merging the New York Heart Association with the New York Tuberculosis and Health Association was discussed last week at a meeting of their representatives at the Academy of Medicine. The New York Heart Association is sponsoring a course of thirteen lectures on heart disease for Thursday afternoons at its headquarters; the first three lectures were by Drs. John Wyckoff, Jr., Iago Galdston and Arthur C. De Graff.——Dr. Binford Throne has been elected president of the Brooklyn Dermatological Society; Dr. John C. Graham, vice president, and Dr. Ernest Almore Gauvain, secretary-treasurer.——At the annual meeting of the Yorkville Medical Society, January 18, an engraved resolution was presented to the outgoing president, Dr. Charles N. Gelber, on behalf of the members in recognition of his services as president; Dr. Louis I. Harris, commissioner of health, was designated by the executive board to present the resolution.——George A. Soper, Ph.D., director, American Society for the Control of Cancer, January 19, addressed a dinner given by that society at the Biltmore Hotel, on "What Europe Is Doing About Cancer."——Dr. Jerome Kingsbury has been elected president of the West Side Clinical Society.——Dr. Edward L. Creeden has been appointed acting director of the Bureau of Preventable Diseases by the health commissioner. Dr. Creeden has been in the city health department for many years.

OHIO

Exhibition of Medical Education.—There will be a free public exhibition at the University of Cincinnati College of Medicine, February 16-22, of the activities of the various departments of the school, and moving pictures of the phases through which medical students pass before they are fitted to practice medicine. The text will be "The Physician in the Making," and the slogan, "What Medical Science Means to You." The object is to convince the public of the indissoluble relation between science and medicine, and to show that brief courses are inadequate for an understanding of the ills of mankind. The exhibition will be under the auspices of the Public Health Federation of Cincinnati and with the cooperation of the Cincinnati Academy of Medicine. Committees in charge have been appointed from the three institutions, and physicians from various parts of the country will assist. The sessions will be from 10 to 2 o'clock, daily.

Personal.—Dr. Edward J. McCormick, for several years secretary of the Academy of Medicine of Toledo and Lucas County, was elected president of that organization at the annual meeting, January 8. This is said to be the only academy of medicine in the state which owns its headquarters, and one of two which employs a full-time secretary.——Dr. Louis O. Saur has been appointed health commissioner of Norwood to succeed Dr. Harry J. Wittenberg, resigned. Dr. Thomas R. Dickson, city chemist of Norwood, resigned to devote his time to private practice. Dr. William H. Klayer and W. H. Rhodenberg were appointed district physicians.——Dr. Frederick F. Dowds has been appointed a member of the board of health of Mount Vernon.——Dr. William De Kleine, director of the child health demonstration at Mansfield, addressed the annual meeting of the Visiting Nurses' League, Fort Wayne, Ind., January 30, on "Does Health Work Pay?"

OREGON

State Board Election.—Dr. William T. Phy, Hot Lake, has been elected president of the state board of health, to succeed Dr. Charles M. Barbee, Portland; Dr. Charles H. Morse, Salem, vice president, and Dr. Frederick D. Stricker, Portland, secretary, reelected. At the meeting, January 12, the board went on record as favoring the establishment of a school for training health officers and nurses in the state.

Hospital News.—The Good Samaritan Hospital, Portland, recently celebrated its fiftieth anniversary. Within the last ten years, improvements to the institution costing $450,000 have been provided.——A two story hospital for the Louise Home for Girls, Portland, is under construction, and a drive is being made in Multnomah County outside the city to provide funds.——A sanatorium and hotel at Hubbard Mineral Springs has been opened to the public.

PENNSYLVANIA

Personal.—Dr. George H. Haas, Allentown, was recently appointed a member of the board of trustees of the Allentown State Hospital by the governor.——Dr. Frank Alleman has been elected president of the board of health of Lancaster; Dr. Charles P. Stahr, secretary, and B. F. Charles, health officer.

Typhoid at Lancaster.—The outbreak of typhoid at Lancaster had amounted to twenty-one cases, January 13. In view of the size of Lancaster, the health department does not consider this an epidemic. Investigations are in progress to determine the source of infection; of the cases reported in December, fifteen were on one milk route, as were most of the cases reported to date in January. Positive findings in a suspected typhoid carrier were awaiting confirmation by the state board of health.

Philadelphia

Personal.—Dr. George E. de Schweinitz, formerly President of the American Medical Association, addressed the University of Pennsylvania Club, New York, last week.——Dr. William W. Keen, emeritus professor of the principles of surgery and clinical surgery, Jefferson Medical College, celebrated his eighty-ninth birthday, January 19.

Hospitals Merge.—St. Luke's Hospital and the Children's Homeopathic hospitals, Philadelphia, are to merge as one unit at the present location of the Children's Hospital, Franklin, Thompson and Eighth streets, where new buildings comprising a maternity building, an "adult" building, a dispensary, power house and laundry will be erected; they will be completed in about two years. St. Luke's will remain where it is until the new construction is completed. The new institution will have a capacity of about 350 beds, and will do general hospital work. There will be a complete reorganization of the staffs, so that regular service will be afforded all present chief and senior staff members. The identity of the two hospitals will be maintained in the new name.

SOUTH DAKOTA

Typhoid Immunization at White River.—For about six years, typhoid fever has occurred at White River and in the surrounding community. There has been an annual rodeo conducted there for twelve years, which attracts thousands of tourists and Indians, who camp around the town. There were fourteen cases of typhoid fever in White River last spring, and fourteen additional cases in Mellette County in August, outside the town. Following the epidemic in White Water, the superintendent of the county board of health, Dr. Francis E. Bouza, immunized 425 persons against typhoid, 236 of whom resided in White River, which has a population of 340. It is significant, the state board of health says, that there was not a single case of typhoid in White River last summer and fall, although in the county the disease was more prevalent than usual. It will be interesting to follow further the effect of immunization against typhoid at White River.

RHODE ISLAND

Last Year's Smallpox.—The state board of health in its annual report to the general assembly, January 15, said, it is reported, that there were more than four times as many cases of smallpox in the state last year than there was in the preceding ten years; ninety-four cases are said to have occurred in 1925. The report stated also that the board had conducted an investigation of forty-seven persons who were practicing medicine illegally; fifteen of them were brought into court; nine were convicted; six cases are pending. The board announces the appointment of Dr. Augustus G. Gigger as epidemiologist.

TENNESSEE

Health at Memphis.—Telegraphic reports from sixty-eight cities, with a total population of twenty-nine million, for the week ending January 16, indicated, according to the Department of Commerce, that the highest mortality rate (23) was in Memphis, and that the average mortality rate for these cities

was 14.9. The mortality rate for Memphis in the corresponding week last year was 17.

Negro Quack Fined.—"Dr." G. H. W. B. Walker, said to be the proprietor of the "Walker Botanical Medical Laboratories and Invalid Hospital," Memphis, was fined $25, Dec. 12, 1925, it is reported, after pleading guilty to the charge of practicing medicine without a license and signing a death certificate as a physician. Walker is alleged to have solicited business through the mails and to have attracted a large number of tuberculous negroes to Memphis by offering a quick cure at low rates.

VIRGINIA

Personal.—Dr. David L. Kinsolving has been appointed a member of the Washington County Board of Health.——Dr. Achille Murat Willis was elected president of the Richmond Academy of Medicine at the recent annual meeting.

University News.—Dr. William J. Lenz, said to be a graduate of the University of Bonn and the University of Heidelberg, gave an address at the Medical College of Virginia, Richmond, January 6, on "Medical and Related Education in Europe." Dr. Lenz is visiting medical colleges in this country to determine, it is reported, why the number of American physicians taking postgraduate work in Europe has decreased.

WASHINGTON

Cultists Bills Killed.—The Public Health League of Washington notes that the efforts of the cultists in the last legislature to increase quackery in the state failed; among the bills killed were senate bill 153, the joker chiropractic bill, senate bill 201, which would have given sanipractors a separate board; house bill 106, which would have given nearly all the rights of general medical practice to sanipractors; house bill 191, providing a wide open policy for nearly all hospitals; house bill 192, which would make English the established language for prescriptions, and senate bill 176, which would have given a group of osteopaths the right to use narcotic drugs.

Personal.—Capt. John D. R. Woodworth, medical corps, U. S. Army, has been assigned to duty at Fort Lawton; Captain Woodworth comes from a tour of duty in Porto Rico. ——Dr. Walter C. Johnson, who has been in charge of the Fort Spokane Indian Hospital at Miles, has resigned from the Indian service.——Dr. Frank C. Myers, Spokane, has been appointed health officer of Duchense County and of the city of Duchense.——Dr. John G. Cunningham, Spokane, has been appointed assistant chief surgeon of the Great Northern Railway; Dr. Cunningham has been chief of staff of the Sacred Heart Hospital, Spokane, for many years.——O. J. Morehead, Sanborn, Minn., has assumed the duties of county health officer at Walla Walla, during the absence of Dr. Joseph P. Kane, the health officer, who is at Johns Hopkins University taking a six months postgraduate course.

WISCONSIN

Personal.—Dr. Jerome R. Head, an instructor in surgery at the University of Wisconsin Medical School, Madison, and the Wisconsin General Hospital, has resigned to become a member of the surgical staff of the University of Illinois College of Medicine, Chicago; Dr. Head is a graduate of the University of Wisconsin and Harvard University Medical School.

PORTO RICO

School of Tropical Medicine.—Dr. William Darrach, dean, College of Physicians and Surgeons of Columbia University, New York, recently went to San Juan, in connection with the School of Tropical Medicine of Columbia University. Dr. Darrach conferred with the governor, the president of the senate, the chancellor of the university, the commissioner of health and other officials. He was the guest of Col. Bailey K. Ashford, M. C., U. S. Army.

Personal.—Dr. Frederick F. Russell, director, International Health Board of the Rockefeller Foundation, and Dr. Hector H. Howard, director of the board for the West Indies, recently visited Porto Rico; in company with the commissioner of health, Dr. Pedro N. Ortiz, and local representatives of the Rockefeller Foundation, they made a study of local health conditions.——Dr. Antonio Fernós recently visited the United States at the invitation of the International Health Board to study malaria control, returning to Porto Rico, Nov. 24, 1925.——Dr. Ramón Lavandera, chief, bureau of social medicine and puericulture, department of health, San Juan, recently spent three months in the United States, mostly in New York, Boston and Schenectady, studying health organization.—— Dr. Ernesto Quintero, chief, bureau of venereal diseases, department of health, San Juan, has returned from Europe and the United States, where he studied recent advances in the treatment of venereal disease.——Dr. Américo Oms, who was in the department of health, San Juan, as medical inspector for several years, has resigned to engage in private practice in the city of Ponce.

GENERAL

Ship's Hospital.—In what is said to be the largest and fastest passenger steamship built in this country, there will be three hospital wards, two to accommodate eight passenger patients with operating room and dispensary, and another for six patients from the crew. The vessel is being built now at the Cramp shipyards, Philadelphia; it will ply between San Francisco and Honolulu.

Chiropractors "Dropped by the Wayside."—According to *Fountain Head News*, published at Davenport, Iowa, by "J. B. P.," more than 4,000 chiropractors' names have been taken off its mailing list since September, 1924; they have, it is said, "dropped by the wayside, closed up shop, taken down their shingles, gone into some other business, turned their diplomas face to the wall. . . . And the bottom has not been reached yet."

Resolution About Trachoma.—At a meeting of the directors of the Eastern Association on Indian Affairs, Dec. 2, 1925, the following resolution was adopted:

WHEREAS, Reports of the Bureau of Indian Affairs disclose an alarming prevalence of trachoma among the Indians, and

WHEREAS, Trachoma can be controlled if not eradicated by proper methods, and

WHEREAS, Trachoma among the Indians also constitutes a serious danger to surrounding white populations, be it therefore

Resolved, That we urge Congress to take immediate and effective action.

Charts for Posture Standards.—The Children's Bureau, U. S. Department of Labor, is issuing six charts on posture standards, for use by physicians, clinics, nurses and others; they were planned on the basis of experience in measuring and observing school children by Dr. Armin Klein at the Massachusetts General Hospital and the Boston City Posture Clinics. The charts are useful for classifying and comparing posture types, each one showing four silhouette figures illustrating excellent, good, poor and bad posture for one type of school child. A limited number of charts are available for free distribution; others will be sold by the government printing office, Washington, D. C., for 50 cents a set.

International Meeting on Tuberculosis.—The International Union Against Tuberculosis will meet in Washington, D. C., September 30-October 2, and the international meeting of the National Tuberculosis Association will meet in that city, October 4-7, with headquarters at the Mayflower Hotel. The session of the International Union Against Tuberculosis will be open only to members of the union, but the National Tuberculosis Association will avail itself of the presence of the foreign representatives, and its meetings will be open to all persons interested. Dr. Theobald Smith will deliver the presidential address, October 4, in the morning, and foreign visitors will speak at a general meeting in the evening, followed by a formal reception. The general subjects for discussion will be: (1) pathology, bacteriology and immunology; (2) clinical; (3) sociological. Arrangements will be made, if possible, with the foreign delegates invited, to give additional addresses under the auspices of the state and local tuberculosis societies. The committee on program and arrangements for this meeting has met twice and will soon meet again.

News of Epidemics.—School authorities at Albany, Ore., have requested that every child who has been exposed to smallpox remain at home for twenty-one days or be vaccinated; there were more than twenty cases of smallpox in that community, January 11, it is reported.——The state department of health is reported to have been investigating an outbreak of smallpox in Tuscarawas County, Ohio, where more than 150 cases have been reported since Nov. 1, 1925. ——An outbreak of smallpox was recently reported in Jessamine County, Ky.; more than 2,500 persons were vaccinated. ——Several patients with smallpox were quarantined at Harrah, Wash., and two cases were reported in Wapato, January 18.——The Willamette Grammar School, Oregon City, Ore., recently closed on account of an outbreak of scarlet fever. The county health officer, Dr. Frank Wallace, also reported twelve cases of smallpox in the northern part of the county. ——The public schools of Crystal, Ind., and a country school known as Brush College were recently closed on account of

an outbreak of smallpox.——There was an outbreak of smallpox in the city of Ottawa, Ill., of four cases, reported, January 13, one of which was said to be of the malignant type. ——Five cases of smallpox were present in Butte, Mont., January 12.——The Ridge School in Highland Park, Ill., was recently closed for an indefinite period on account of an outbreak of eight cases of scarlet fever among the pupils.—— There have been more than 600 cases of German measles in Albany, N. Y., reported in the last two months.

Visiting Teachers' Demonstrations.—In cooperation with local boards of education, the Commonwealth Fund has arranged in its program for the prevention of juvenile delinquency to provide visiting teachers for three years in about thirty widely separated communities. The object is to assist the public schools in preventing delinquency and crime by giving special attention to pupils whose behavior makes them constant puzzles. The demonstrations, it is hoped, will determine whether timely study of the difficulties of these children will make them happier and more effective citizens. Child guidance clinics are now being conducted in Philadelphia and Cleveland under the direction of the National Committee for Mental Hygiene, and similar demonstrations have been carried on for months in five other cities; child guidance clinics are now fully supported by the local communities in St. Louis, Dallas, Minneapolis, St. Paul, Los Angeles, Memphis and Richmond; 270 cities applied for visiting teacher demonstrations under the Commonwealth Fund's plan, and from them about thirty were selected. They are:

Berkeley, Calif.	Detroit, Mich.	Racine, Wis.
Birmingham, Ala.	Durham, N. C.	Richmond, Va.
Bluefield, W. Va.	Huron County, Ohio	Rochester, Pa.
Boone County, Mo.	Hutchinson, Kan.	Rock Springs, Wyo.
Burlington, Vt.	Kalamazoo, Mich.	San Diego, Calif.
Butte, Mont.	Lincoln, Neb.	Sioux City, Iowa
Charlotte, N. C.	Monmouth County, N. J.	Sioux Falls, S. D.
Chisholm, Minn.	Omaha, Neb.	Tucson, Ariz.
Coatesville, Pa.	Pocatello, Idaho	Tulsa, Okla.
Columbus, Ga.	Portland, Ore.	Warren, Ohio

The Joint Committee on Methods of Preventing Delinquency reports that in ten of the twelve cities where three year demonstrations were recently closed, the visiting teacher service has been established as a regular part of the public school work.

FOREIGN

Urology Congress.—Notice has been received of the seventh assembly of the German Urologic Society, which is to convene at Vienna, Sept. 30, 1926. The two topics appointed for discussion are "Anuria" and "Malignancies of the Bladder." The secretary in charge is Dr. H. G. Pleschner, Alserstrasse 20, Vienna, Austria.

Medical Building at Exposition.—Elaborate preparations are being made for the Düsseldorf Hygiene, Social Service and Physical Training Exposition to be held this year. The *Münchener medizinische Wochenschrift* states that the organized profession is to have a building of its own to display the achievements of German medical men and what the medical profession means to the public; "in particular, the public will be given an idea of the immense amount of self-sacrificing work the physician accomplishes every day which is not understood by the public." Under the supervision of Dr. Schlossmann, professor of pediatrics, University of Düsseldorf, there will be demonstrations of child welfare and lectures in dietetics and hygiene, beginning May 8. Professor Schlossmann is the editor of Pfaundler and Schlossmann's "Encyclopedia of the Diseases of Children."

Personal.—Prof. H. Vincent, who presided at the international congress on military medicine last spring, and General Toubert of the medical staff, were presented recently with bronze portrait tablets as a souvenir of the congress. The *Presse médicale* reproduces these medallions and states that replicas can be obtained of them for 25 francs each by applying to the treasurer of the military medical school at Val-de-Grâce. ——Dr. Widal is in charge of the clinical week now being organized for Paris, July 15 to 18. Brussels, Toulouse and Tunis have each had one or more or will soon have one of these three or four day assemblies for postgraduate work and converse. Physicians flock to them from long distances. ——The *Klinische Wochenschrift* mentions that Dr. Brauer of the Koch Institute for Infectious Diseases, Berlin, has been appointed director of the bacteriologic institute at Sofia, Bulgaria.——Dr. Matagne, Brussels, has had to have a finger amputated on account of injury from the professional use of radium.——A bust of Dr. Demelin, accoucheur en chef honoraire to the Paris hospitals, was unveiled recently at the Maternité.——Dr. H. Brongersma has resigned the chair of urology at Amsterdam and will settle in southern France.—— Dr. Bidou, Paris, who has charge of the rehabilitation of cripples department at the Salpêtrière, was recently awarded the fourth Jean Barès prize, given by the national bureau of researches and inventions to an inventor who has rendered distinguished service to French industry and is the father of three children at least. Dr. Bidou has twelve.——The Royal Astronomical Society of London has awarded this year's gold medal to Prof. Albert Einstein of Germany for his work on the theory of relativity.

Government Services

Veterans' Bureau Resignations

The *U. S. Veterans' Bureau Medical Bulletin* for January announces the resignation from the Veterans' Bureau recently of the following physicians:

Dr. Joseph J. Bateman, resigned at Washington, D. C., Nov. 6, 1925; Dr. Berna T. Bowers, resigned at Perryville, Md., Aug. 26, 1925; Dr. Richard H. Follis, resigned at Washington, D. C., Oct. 31, 1925; Dr. Samuel W. Holt, resigned at Fort Lyon, Colo., Oct. 31, 1925; Dr. Edward S. Imel, resigned at Fort Bayard, N. M., Oct. 12, 1925; Dr. Janvier W. Lindsay, resigned at Washington, D. C., Oct. 31, 1925; Dr. Alfred J. Ostheimer, resigned at Perry Point, Md., Oct. 23, 1925; and Dr. Maynard J. Simmons, resigned at Perry Point, Md., Oct. 31, 1925.

Army Personal

Major William A. Murphy, U. S. Army Medical Corps, stationed in Panama, sailed about January 9 for Arica, South America, to assist in caring for the health of Americans attached to the Tacna-Arica plebiscite commission.

Assignments Abroad

Senior Surg. Taliaferro Clark, U. S. Public Health Service, was assigned to duty in London, England, January 19, to take charge of quarantine and immigration activities in Europe; Surg. W. F. Tanner has been assigned to duty at Rotterdam, Netherlands; Surg. Dana E. Robinson has been assigned to duty at Antwerp, Belgium, from which post Surg. Lionel E. Hooper has been relieved; Surg. Walter W. King on instructions from Senior Surgeon Clark will proceed from Paris, France, to such other ports as may be necessary to examine aliens and enforce the quarantine laws, and return to his station; Surg. Lon O. Weldon has been directed to proceed from Liverpool, England, to Rotterdam, Holland, and Antwerp, Belgium, for a conference with the consuls at those places.

New System to Obtain Medical Officers

The *Military Surgeon* publishes the names of sixty medical students and twelve alternates who will graduate this year, who have been selected by competitive examinations for internships in the army hospitals, subject to physical examination. The largest number from any one school is eight from Vanderbilt University; six are from the University of Pennsylvania, and five from Jefferson Medical College. On graduation, these students will be commissioned in the medical reserve corps, and, August 1, will begin their army service as interns; if, after a year, they are favorably recommended by the commanding officers of the hospitals at which they serve, they will be eligible to be commissioned in the regular army without further examination, other than physical.

The Government Needs Physicians

The U. S. Civil Service Commission announces that vacancies exist in the Indian Service, Public Health Service, Veterans' Bureau, Panama Canal Service, Coast and Geodetic Survey, and other branches of the government, and that applications for positions will be received until June 30. The entrance salary ranges from $1,860 to $5,200 a year; there are higher salaried positions to be filled, and promotion may be made in accordance with civil service rules. There is a special need for physicians qualified in the specialties and in general medicine and surgery. Applicants will not be required to report for examination, but will be rated on their education and training and experience. Information can be obtained from the U. S. Civil Service Commission, Washington, D. C.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 2, 1926.

Insanity and Crime

Dr. John Carswell, in a paper on insanity and crime, read at a meeting of the Royal Medico-Psychological Association, said that the McNaghten rules had received such fresh support as to preserve them for another generation. Yet the medical profession would not admit that the controversy was ended; indeed, there seemed a desire for adjustment of the medical and legal points of view. The rule recommended by the Atkin Committee read: "It should be recognized that a person charged criminally with an offense is irresponsible for his act when the act is committed under an impulse which the person was by mental disease in substance deprived of the power to resist." The committee added: "It may require legislation to bring this rule into effect," and, later, "We have no doubt that if this matter were settled most of the criticisms from the medical point of view would disappear." Did the accused know what he was doing? And if he knew, did he know that it was wrong? These were the formulas framed by lawyers, and the psychiatrist had no responsibility for them. Fitzjames Stephen, in his History of the Criminal Law (**2**:174), after considering Maudsley's observations, said: "I understand by the power of self-control, the power of attending to general principles of conduct and distant motives and of comparing them calmly and steadily with immediate motives. Diseases of the brain and the nervous system may cause definite intellectual error, and if they do so, their legal effect is that of the innocent mistakes of fact. Far more frequently they affect the will by either destroying altogether or weakening to a greater or less extent the power of steady, calm attention to any train of thought." A series of cases in recent years showed that judges had charged juries in the sense indicated, and even in the much debated Ronald True case Mr. Justice McCardy left three questions to the jury. The first two were in the terms of the McNaghten rules, and the last was expressed thus: "Even if the prisoner knew the physical nature of the act, and that it was morally wrong and punishable by law, yet was he, through mental disease, deprived of the power of controlling his actions at the same time? If yes, then, in my view of the law, the verdict should be 'Guilty but insane.'" The judges who delivered charges in the sense quoted agreed that uncontrollable impulse could be read into the McNaghten rules; that was to say, the rules were logically insufficient unless some such idea could be incorporated with them. The recommendation was not based on any principle of criminal responsibility not already recognized.

Expected Results of Ban on Preservatives

Physicians are looking forward with interest to the expected improvement in the nation's health when the regulations forbidding the use of preservatives in foodstuffs come into force, in January, 1927. It will be an experiment on a vast scale. In a year's time 39,000,000 people, who for a generation have been feeding on food plus drugs, will begin to feed on drug-free food. The use of preservatives has been blamed for the increase of cancer. By the end of 1927 we shall have some evidence as to the correctness of that theory.

Health of the Air Force: Transfer of Casualties by Air

A general improvement in the health of the air force is recorded for 1924. Compared with previous years, the rates of admission to hospital, invaliding, and number of sick daily, and the number of days' sickness for each man were the lowest so far recorded. The incidence of primary venereal disease, already low, was still further reduced, and the rate, 16.3 per thousand of strength, was the lowest yet attained. The average strength of the force as a whole was 31,622, and the total number of cases of disease and injury was 32,337, equivalent to a case ratio of 1,019 per thousand of strength, as compared with a corresponding ratio of 1,227.3 during 1923. Excluding cases of forty-eight hours' duration, the case ratio was 463.6 per thousand, compared with 473.8 in the previous year. The death rate increased from 3.9 to 4.5 per thousand, but the final invaliding rate showed a reduction from 12.7 per thousand to 9.5. As a result of flying accidents, 169 cases of injury, resulting in sixty-nine deaths, were recorded in 1924. The number of deaths, as a percentage of the total casualties due to flying, remained the same as in 1923, namely, 41 per cent. A comparison of the figures for the last four years shows that the case rates per thousand of strength for officers and men were highest during 1924. Further, the increase in the case rate for officers was more marked for injuries than for deaths. The slight increase in the death rate for airmen is considered to be due to the increasing numbers of airmen-pilots qualifying and to the increasing number of airmen carried as passengers or undergoing instruction in aircraft. In connection with the progressive increase of cases, it is pointed out that the number of hours flown has increased each year in an even greater ratio. Further, aircraft are increasing in size and carrying capacity, and consequently a greater number of personnel is exposed to the risk of injury in the event of large aircraft being involved in an accident. A further factor during 1924 was the fact that four collisions in the air accounted for ten deaths. During 1923, no deaths from accidents of this kind were recorded. Actually, the hours flown to each fatal accident were higher during 1924 than in any of the previous years.

The transfer of the wounded by air, which initially was in the nature of an experiment, has become the recognized method in Irak, the conditions obtaining in that country being particularly suitable for this form of transport, while the employment of small aircraft for the carriage of stretcher patients cannot be regarded as otherwise than an improvised means in an emergency. It has been used with success when the casualty was located in a district where the employment of larger aircraft was impossible and also where there was need for immediate medical attention. Sitting and lying patients are normally evacuated in the larger types of aircraft. The total number of casualties transferred by air during 1924 was eighty-one.

Psychanalysis a Cause of Suicide

An inquest was held on a barrister, aged only 23, who committed suicide by throwing himself from his bedroom window. His father stated that he had been in pretty good health up to last August, but of late had been depressed and worried. His family wondered whether it was due to a girl that he had been friendly with until she went away some time ago. There was no reason in his association with the girl to lead him to commit the fatal act. He had asked his son, as the depression synchronized with the girl's going away, whether that had anything to do with it, and he replied that it had not. A physician who had attended the deceased said that he suffered from depression and melancholia, which he put down to nervous exhaustion. A physician and also a coroner, a friend of the family, said that the deceased was an only child, and, in a sense, he was never young, always being much older than his years. He had a fine scholastic career, at the end of which he passed his examinations for the bar in quick time. In the beginning he had an unusual amount of

work for a young barrister, but it slackened, and this became a source of worry to him. Eighteen months ago, after returning from a holiday, the witness took him to a specialist, who thought he was suffering from epidemic encephalitis. About that time there was a girl to whom he had become in a mild manner attached, and her leaving London synchronized with the beginning of these troubles. He could not concentrate, and became self-depreciatory, unhappy, irritable and dogmatic. A few weeks later his father took him to a psychanalyst, a well known authority on the subject and attached to a large London hospital, but the treatment proved too great a strain and the trouble was intensified and produced a morbid condition of introspection and, through laying bare his subconscious mind, injured his mind greatly, and he had to give up the treatment. The self-depreciation manifested itself more particularly in his work, and he became affected so greatly that he began to think that he would have success in anything but the law. The witness' view was that although the boy did have a mild attack of epidemic encephalitis, and likewise was slightly troubled about the girl, and because success in his career had not continued, the cause of the condition to which he arrived was the psychanalysis. "While I do believe there are cases in which psychanalysis may do good," added the coroner, "in the majority, especially in such a case as this, the laying bare of his subconscious mind injured his sensitive mind and did him harm by debasing him. Within a few days of his death the deceased said how degraded the treatment made him feel, and that he felt he could not face it, and in consequence he had given it up. But the damage had been done." The coroner that held the inquest said there was no doubt that psychanalysis was a dangerous weapon in a large number of cases, and might aggravate the trouble from which a person was suffering.

A verdict of "Suicide while of unsound mind" was recorded.

The New Health Society

Sir W. Arbuthnot Lane, president of the New Health Society, explains in the lay press that this society was formed in the first instance by a number of physicians with the help of scientific experts and business men. They had come to the conclusion that the time had arrived when a society should be formed with the object of instructing the public in such laws of health as would insure freedom from the several diseases that affect members of a civilized community, but from which natives living under normal conditions are completely exempt. Such natives never suffered from the chronic diseases of the gastro-intestinal tract, which both directly and indirectly produce so much deterioration in physique, so much abdominal discomfort and mental and physical depression, or infections of the intestine and stomach, as colitis, appendicitis, gastric and duodenal ulcer and later cancer of the several portions of the intestinal tract. Besides these diseases, the absorption of poisonous products from an infected intestine produces contamination of the entire blood supply in the whole body. This foul blood causes a deterioration and degeneration of every tissue in the body, and, reducing their vitality and resisting power, permits invasion by organisms or toxins that produce rheumatism, rheumatic gout, tuberculosis, diseases of the heart, blood vessels, liver, gallbladder and kidneys, with cancer of the degenerating sexual organs of the women. All these diseases are due to mechanical and toxic changes in the gastro-intestinal tract consequent on the faulty diet and habits of civilization. The society determined to deal with the primary cause of all these diseases by instructing the public in such diet and habits as will prevent their development. For this it is necessary to provide in sufficient quantity such fruits and green food, whole flour bread, and the like, as are necessary to keep the body in health and render these simple foods accessible to those of limited means. It would be of great advantage to the nation if greater efforts were made to encourage the home production of more fruit, more milk, and cheaper vegetables.

The society feels that an immense amount of benefit would result from a comparatively small expenditure, by obviating much of the expenditure on hospitals and asylums and by insuring the development of a healthy, happy race. For this only a very moderate outlay of money is required, as compared to the vast amount necessary to attempt to cure disease once it has developed.

PARIS

(From Our Regular Correspondent)

Jan. 11, 1926.

Treatment of Chancroid with the Antistreptococcus Vaccine of Nicolle

Addressing the Société médicale des hôpitaux recently, Hudelo, Duhamel and Drouineau reported their favorable results with Nicolle's vaccinotherapy, after the method prescribed by Nicolle of Tunis, in a number of Ducrey bacillus infections. Their results confirm those published by several authors (Dubreuilh and Broustet, and Massias). The latter authors used a vaccine prepared by Nicolle himself. Hudelo and his co-workers used a commercial vaccine.

From the facts observed they draw the following conclusions: 1. In the chancroid stage, vaccinotherapy causes rapid cicatrization and prevents the dissemination of the bacillus with the formation of secondary chancres. 2. In the bubo stage, during the presuppurative, inflammatory period, vaccinotherapy combats pain and lymphatic involvement. In the suppurative stage, sometimes purulent resorption must be treated by a combination of vaccinotherapy with local treatment (simple puncture). 3. In the phagedenic stage, whether in the superficial or in the deeper tissues, vaccinotherapy brings about rapid cicatrization, provided one first gets rid of associated infections, and stimulates tissue repair. Spontaneous reinoculation has not been observed. Positive autoinoculation before the treatment was begun has become negative during the course of the treatment.

The technic is very simple. Injections are made intravenously. They are given usually every two days, or at longer intervals if the reactions have not completely subsided. The initial dose is 225 million bacilli, which is increased to 335, 450, 550, 675 and 675 million. Not more than six injections are given in a series. Ordinarily the effects are manifested following the first injections, and very often one cannot go beyond the third. As a rule, when the therapeutic action has been secured, it is well to give a supplementary injection. These injections cause violent general reactions, sometimes with pallor, tachycardia and tendency to faint. The patient should be advised of this. Marked reactions are due less to the vaccinotherapy itself than to the depression in certain patients who have been long infected. All the patients at the first injection give a febrile reaction. The temperature may reach 40 C. (104 F.) three hours after the injection, remain there for from six to nine hours, and then drop to normal within from twenty-four to forty-eight hours. The fever may, in rare cases, be accompanied by chills and vomiting. This therapy acts by means of shock. The authors have begun to study into this colloidoclastic shock, but their results are as yet insufficient for definite deductions. Hudelo and his co-workers have studied the specificity of the intradermal reaction with this vaccine and think that it is not absolute. In cases of mixed chancre, vaccinotherapy may bring out the characteristic indurate erosion of the associated spirochetal infection.

To sum up: Of nineteen cases in which vaccinotherapy was tried, the authors experienced but one failure. Treat-

ment and convalescence are shortened and overcrowding of hospital wards thereby prevented.

Tuberculosis in Bakers

Parisot and Richard (Nancy) observed a mortality of 10 per thousand from tuberculosis among workmen in bakeries in the city of Nancy, whereas the mortality is only from 2.5 to 3 per thousand among the general population of the city. Among cake bakers, the mortality from tuberculosis is nil, and the morbidity is less than 1 per cent. The authors think that this difference is due to night work and to the fact that workmen in bakeries are not restricted by the eight hour law, and do not have a weekly rest period. Consumers of bakery goods run considerable risk when tuberculous workmen continue with their work.

Simultaneous Bilateral Therapeutic Pneumothorax

Rist, Coulaud and Chabaud recently presented before the Société des hôpitaux de Paris several observations on simultaneous bilateral therapeutic pneumothorax. In alternate bilateral therapeutic pneumothorax, carried out to combat a tardy bilateral infection, it may happen that the insufflations are commenced along with the bilateralization, before the primary pneumothorax has been completely resorbed in the side first treated; but in that case it is assumed that the lung on that side has sufficiently recovered to take over the respiratory function alone, and it is expected that it has regained sufficient expansion so that it will be safe to collapse the opposite lung, subsequently infected.

Simultaneous bilateral pneumothorax, however, is indicated not in tardy bilateralization but in early bilateral involvement. Here it is proposed to bring about a certain amount of collapse of the two lungs at the same time, relying for breathing on what remains useful in the lungs that have been reduced in volume. Simultaneous double pneumothorax appears to have been studied much more than alternate pneumothorax. W. Parry Morgan of Cardiff was the first to propose it in 1913 and he carried it out in a number of cases. Gwerder Pedoja, Barlow and Cramer have tried it. Bernou was the first in France to use the method, in 1923. Sergent, in 1924, communicated to the congress of Lausanne three cases of partial simultaneous double pneumothorax which he had instituted more or less as a prophylactic measure, the day following confinement, in tuberculous mothers; and Besançon and Jacquelin published the same year a very encouraging case of simultaneous bilateral partial pneumothorax.

The authors were induced to carry out simultaneous pneumothorax on seeing with what ease the patients endured a second pneumothorax before the first had been entirely resorbed, or, while the lung first collapsed and now partially expanded had, under the influence of a diffuse cicatricial sclerosis, lost considerable of its elasticity and volume.

Bernard and Le Play showed, several years ago, that the respiratory function may go on with much less pulmonary parenchyma than we have ordinarily. Some time ago, E. Coulaud presented a first case in which he had employed simultaneous bilateral pneumothorax with a success that cannot be denied up to the present time. To this first observation, the authors add a series of others. In several cases, the method did not prevent the tuberculosis from becoming generalized and fatal. But in other cases, fortunately, in which the degree of involvement rendered the situation more than grave, the simultaneous pneumothorax brought about remissions which have persisted in an unexpected manner.

The question arises whether this radical therapeutic method can effect a cure. A cure appears probable in a certain proportion of cases. It is at least certain that several of their patients have had their lives prolonged appreciably by this method.

GENEVA

(From Our Regular Correspondent)

Jan. 10, 1926.

Treatment of Gout

For the last three years the Geneva school has devoted much time to the study of blood dilution in gout. Increase in hydremia causes an acute outburst of the process. Effective prophylactic and therapeutic measures are those which increase the viscosity of the blood. In the treatment of gout the degree of blood dilution, measured by the degree of viscosity, or by any other means, should be ascertained. Furthermore, in a hyperuricemic gouty subject a course of diuretics or alkaline medication (vichy and similar waters) will not cause acute phenomena and therefore may be resorted to without reserve. In the hyperuricemic gouty subject with normal or subnormal viscosity, any treatment must be closely followed in order to prevent an acute outburst. With a dry diet and large amounts of sugar, combined with aperients, the blood viscosity can rapidly be increased. This is the most effective treatment to control an acute attack of gout.

Nostrums and Quackery

In the lay press, one will invariably find advertisements of nostrums or medical institutes, usually run by unqualified persons, inviting the public to write for a booklet which will be mailed free of cost, containing all necessary information regarding treatment. This deceitful publicity is clearly a form of illegal practice of medicine. The French minister of public hygiene, Mr. Justin Godart, has taken the initiative against this and his letter is worthy of being quoted:

> Many well founded complaints have been received relating to the exploitation of patients by enterprises attracting public attention by a publicity abusive in character in newspapers and periodicals, in circulars sent by post, etc. For the present, as far as advertisements in newspapers and periodicals are concerned, I ask the press to submit the insertion of medical advertisements to the following two conditions:
>
> 1. That the text be written with discretion and especially that the word "cure" does not appear. No honest physician or conscientious savant can claim that he can cure. The word "cure" is an impudent assertion, a fallacious promise characterizing an attempt to swindle.
>
> 2. That no medical advertisement shall be published under a pseudonym or imaginary scientific establishment such as Institute or Academy. In this respect the law is explicit. He who offers medical services must do so under his own name, thus engaging his responsibility and honor.

Judging by the lay press, the wishes of M. Godart have not been respected, and seem to be practically doomed to disappointment as long as the editors of newspapers are unable to control advertising published in their columns. In Switzerland, as in France and elsewhere, advertisements are in the hands of publicity agencies, who hire one or several pages in newspapers, provided the text contains nothing immoral. Medicopharmaceutic publicity takes large space and is an excellent source of income to these agencies. Hence, they are reluctant to give up this class of advertising. Dr. André Guisan of Lausanne has recently stated that "in the interests of public health a law should be passed prohibiting the lay press from publishing medical advertisements which, speaking mildly, are deceitful in at least 75 per cent of cases."

Development of Scientific Medicine

In the opening lecture in the course of medical philosophy at the University of Geneva for 1926, Dr. Cumston spoke of the development of scientific medicine, stating that medicine is an art supported by several sciences and becoming more certain day by day, thanks to notions derived from these sciences. Medicine depends on encouragement from biology and several sciences improperly termed accessory. Progress of medical art is due to discoveries made in the five hierarchic sciences. This progress has been accomplished by eliminating theological, metaphysical and mystic prejudices. It is a mistake to suppose that antagonism exists between practice

and theory; theory is merely practice explained, and practice is only the application of the theory. Be it at the patient's bedside or in the laboratory, the same faculties are at play. The study of the sciences is necessary for the practitioner, because they give intellectual discipline, which leads him to act with full knowledge of cause and effect. What have been complaisantly called sagacity, tact and intuition in a physician are simply the inductions and deductions of any well educated man, so that their practical results are more to be credited to science than to the man. Consequently there is no opposition between practice and theory. Practice is scientific when it results in demonstrating the falsity of an established law on a given subject. Clinical work and diagnosis in particular are now on a scientific basis. Treatment is based on data acquired slowly and with difficulty by many generations of learned men. Therefore, providential hypotheses, unfortunately introduced into medicine, are to be discarded. If, in the eyes of the world, the practitioner still overshadows the man of science, it is merely for those patients who care less for exact data than for intuition and ask merely to be relieved of their symptoms. We are nearing the time when the empiricism of the early ages of medicine will be replaced by scientific application of remedies, but this will not be if we allow ourselves to be carried away by discoveries that prove useless after trial. We possess the means for diagnosing disease, and sure means of cure will be forthcoming if our enthusiasm for new therapeutic agents is kept in check.

VIENNA

(From Our Regular Correspondent)

Dec. 12, 1925.

Threatened Curtailments in Vienna Hospitals

The physicians of the Vienna hospitals, and more particularly of the Allgemeines Krankenhaus, or general hospital, became aroused recently over the report that the government was planning a reduction in the number of physicians attached to state hospitals. It was no secret that the reason for the proposed changes was that a number of chief physicians, through their liberal views and their expressions on religious and political subjects, had incurred the displeasure of the government, and that this means was to be taken to get rid of them, together with their assistants. It was planned, therefore, to close the wards or departments conducted by the offending heads or to combine them with the remaining clinics. If this idea had been carried out, a large number of young physicians would have been deprived of practical training, because here changes in the staff are easily accomplished, whereas in the clinics they are much more difficult. The league of hospital physicians, and the league of chief physicians, registered such an energetic protest that those in authority issued a statement that no hospital departments would be abandoned, nor the terms of service of old, experienced teachers or medical students be concluded. The doubts of the hospital physicians, however, have not been entirely dispelled. Attention is called to the fact that the crowded condition of the Vienna hospitals makes it imperative that additional space for general wards be provided.

Modern Conceptions of the Physiology of Work

At a recent meeting of the Vienna biologic society, Professor Rubner spoke on "Muscular Performance in Man." He discussed the problem from two different angles, that of industrial work and that of physical exercise for the purpose of health culture. The latter is intended to make the body not only healthy but beautiful, whereas occupational work often brings a one-sided muscular development. In spite of machines and chemistry, the demand for man power is still very great. Researches reveal that metabolic exchange consists of three distinct forms: (1) basal metabolism; (2) the specifically dynamic increase of metabolism resulting from food intake, and (3) work metabolism. The first type represents the extent of oxidation processes while fasting and in a condition of muscular rest. Through food intake the metabolism is increased in proportion to the quantity and quality of food ingested. For motor performance a still further increase of metabolism is required. The city dweller—especially, the sedentary worker—whose exercise consists mainly in walking to his office and back, has a daily metabolism of approximately 2,600 calories, 24 per cent of which is expended in muscular work. On the other hand, the metabolic exchange of persons engaged in hard labor—wood choppers, for example, who perhaps perform the severest labor of any class—amounts to 5,600 calories daily, more than 60 per cent of which is applied to muscular work. It will usually be noted that the protein intake increases in direct proportion with the number of calories consumed. The standard of muscular performance for a human being is usually placed at one-eighth horse power. The question as to the duration of a normal working day cannot be decided solely on a hygienic basis. Questions of prudence enter very largely into the matter. Climatic, economic and eugenic factors are important. Also the kind of clothing worn by workmen has a bearing, because the blood vessels that supply the skin and the muscles are still distended and surcharged after the work is done. An undue loss of heat may occur, which may produce a chilling of the body.

Hibernation

On the imperfectly understood subject of hibernation, Dr. Friedmann recently gave a lecture in the Vienna "Urania," an institute in which lectures for the instruction of the masses are held. The hibernating state has nothing analogous in the life of man. There are two forms of hibernation: the uninterrupted form, which has its onset with the beginning of winter and persists until spring, and the temporary form, which is interrupted on sunny days in winter, only to begin again with the return of cold weather. For example, the bear, when winter seems to be loosening its grip, will often leave his den but will return as soon as the mercury drops. Also the badger and the polecat rouse themselves frequently, whereas the marmot and the dormouse sleep the whole winter through. During the winter, the latter will not rouse themselves even when attacked. Their condition seems to resemble a state of unconsciousness, characterized by lowering of the body temperature, retarded circulation of the blood, slight and superficial breathing, no ingestion of food, no elimination of urine or feces; that is, the organism is set for a minimum of passive metabolism. The small amount of energy required for this existence is secured from the oxidation of deposits of fat found in the body. The mammals have a special hibernation gland which serves this purpose. Animals that change their temperature take on the temperature of their surroundings; it is said that frogs survive even though frozen in on all sides. The period of hibernation may extend over only a few weeks; or it may occupy nine months of the year. Those animals whose body temperature is subject to variations can be awakened from their sleep only by the slow application of heat.

Less well known than winter sleep is the summer sleep of a number of animals. Many species of fish—some of the Siluridae, for example—bury themselves in the mud or slime whenever the waters that they inhabit become dried up during a drought. They become entirely torpid, but the advent of the rainy season awakens them. In the tropics, many species of lizards, crocodiles, snakes and toads, during the dry season, lie in the warm, half-dry mud in swamps and river beds and sleep for days and weeks, just like the winter sleepers. During the summer sleep, as well, the

consumption of energy is reduced to a minimum. It is true, it is possible to awaken these animals from their summer sleep, but they soon go to sleep again unless they are provided with water.

BERLIN

(From Our Regular Correspondent)

Dec. 12, 1925.

The Antivaccinationists

Since the introduction of compulsory vaccination by federal enactment back in the seventies of last century, there has been constant agitation in favor of either repealing or modifying the law. Some of the opponents hold that the law is superfluous and useless; others think that vaccination should be compulsory only when an epidemic is threatened. Both parties make use of the plea that they are conscientious objectors, especially since in England conscientious scruples are recognized as an excuse for noncompliance with the law. According to this principle, every lawful guardian of a child shall have the right to demand that the child shall be exempt from vaccination if the guardian declares that he has conscientious objections to the procedure. In view of the lack of knowledge displayed by the masses in matters of public health, it is evident that the admission of such a plea is a mere farce. All those who have come under the influence of a skilful agitator will plead conscientious objections. It is therefore surprising that Professor Grotjahn, who occupies the chair of hygiene at the University of Berlin and who has performed meritorious service, is in favor of the admission of conscientious objections as a valid excuse for failing to comply with the compulsory vaccination law. The sole explanation for this is that Grotjahn is a *Freiheitsschwärmer*, or freedom enthusiast, and consequently a member of the social democrat party. In an article in the *Deutsche medizinische Wochenschrift*, he has assigned the reasons for his attitude on the question. In connection with that article, the editor of the *Wochenschrift* published a large number of communications from experts, which prove what a blessing compulsory vaccination has been in the past and point out the dire results that would follow the introduction of the conscientious objections clause. Attacks on compulsory vaccination occur periodically in parliament, and more frequently now that the democratic and social democratic parties are so influential. For that reason, the president of the Prussian public health council recently called another conference of the adherents and opponents of compulsory vaccination. The arguments presented by the leading speakers deserve careful consideration. Professor Gins, the director of the Berliner staatliche Lymphanstalt, advanced the following statements: 1. The conscientious objections clause, in the form in which it is presented in England, destroys the principle of general vaccination and makes it dependent on the caprice of the parent or guardian. 2. In England and in other countries with similar vaccination regulations, the percentage of vaccinated persons has fallen off greatly. 3. These very countries have, in recent years, presented a considerable increase of smallpox cases. 4. Even the most rigorous isolation measures have not availed to eradicate smallpox in those countries. 5. On the contrary, the countries in which general vaccination has been enforced have remained free from smallpox in spite of constant exposure on the frontiers. 6. The conscientious objections clause would set our prophylactic campaign against smallpox back more than fifty years. 7. Therefore, for medicohygienic reasons, the introduction of the conscientious objections clause in Germany should be vigorously combated. 8. The introduction of the conscientious objections clause in Germany would not likely lessen the opposition to the vaccination law but would result in a considerable increase of antivaccination agitation. 9. The agitation in favor of the conscientious objections clause should therefore be combated by the authorities for political reasons as well.

The representative of the antivaccinationists, Dr. Winsch of Berlin, set up the following theses: 1. My own observations very early in life shattered my faith in the value and efficacy of vaccination against smallpox. 2. My own studies awakened in me later the conviction that the belief in the protective value of vaccination is only an illusion. The alleged proofs of the friends of vaccination will not stand the test of an earnest critical review—neither the statistical reports nor the Jenner experiment, nor the supposed differentiation of the annual supplies of men for the army caused by vaccination, nor finally the favorable military statistics of Prussia after the introduction of revaccination in 1834. 3. Vaccination is reprehensible from the standpoint of race hygiene, or eugenics, because the vaccination injuries weaken the constitution and cost unnecessary lives. 4. The belief in vaccination is a superstition, handed down from the past, which cannot be reconciled with the theory of asepsis that is generally recognized in medicine today. Vaccination introduces infectious material into a wound, which, under any other circumstances, would be regarded by medical opinion as a crime. Today, vaccination should be replaced by modern hygiene, to the progress of which we owe the conquest of smallpox as an epidemic disease. Hygiene is inoculation with health; vaccination is inoculation with disease. It is not vaccination that protects us from an epidemic; we must have in addition compulsory notification, isolation and disinfection. 5. The total or partial abolition of compulsory vaccination in England and Switzerland, in spite of the assertions of provaccinationists to the contrary, has proved beneficial. The alleged increased incidence of smallpox (with a very low mortality rate), reported in recent years from those regions by the provaccinationists, is only a bluff of the adherents of vaccination who are still officially in control and who hope by such tactics to regain the territory they have lost. The truth is, cases of chickenpox have been diagnosed as smallpox. 6. The effect, therefore, of the abolition of compulsory vaccination in Germany cannot be other than favorable.

To every physician who will judge them objectively, the difference between these two expositions from the standpoint of scientific insight and logical presentation will be readily apparent. Evidently, the difference was also apparent to the conference, for the outcome was that a large majority of those present decided in favor of compulsory vaccination and against the conscientious objections clause. A resolution was passed, however, to eliminate the section of the law requiring children whose parents resisted compulsory vaccination to appear before the police authorities, and to deal with this problem by the imposition of fines.

Marriages

CLEMENT BIDDLE, Commander, U. S. N., retired, to Mrs. Rutherford Pearson, both of Philadelphia, Dec. 9, 1925.

THOMAS GRAHAM GLASS, Marlin, Texas, to Miss Dorothy Marshall of New York, at Dallas, January 12.

WILLIAM G. FALCONER, Clearfield, Pa., to Miss Mary Waterworth of Syracuse, N. Y., recently.

DUDLEY CROMWELL KALLOCH to Miss Marjorie Overman, both of Mescalero, N. M., January 1.

WILLIAM J. DOYLE to Miss Alice Smith, both of Wilkes-Barre, Pa., Nov. 25, 1925.

SAMUEL W. VERNICK to Miss Phoebe B. Herbert, both of New York, January 8.

Deaths

Charles Howard Lewis ✠ Richmond, Va.; University of Maryland School of Medicine, Baltimore, 1900; formerly assistant professor of pharmacology and demonstrator of physiology, University College of Medicine, Richmond, and associate professor of physiology and instructor in obstetrics, Medical College of Virginia, Richmond; served in the M. C., U. S. Army, during the World War; aged 48; died, January 3.

William F. Brunner, Savannah, Ga.; University of Georgia Medical Department, Augusta, 1877; commissioner of health for Chatham County and formerly city health officer of Savannah, Spanish-American War veteran; aged 67; died, January 3, at a local hospital, of complications resulting from a fall which fractured his hip.

James Avery Draper ✠ Wilmington, Del.; University of Pennsylvania School of Medicine, 1898; formerly president of the city board of health; served in the M. C., U. S. Army, during the World War; on the staffs of the Delaware and St. Francis hospitals; aged 51; died, Dec. 9, 1925, of pneumonia.

Wooster Hassell House ✠ Goldsboro, N. C.; Jefferson Medical College of Philadelphia, 1915; formerly secretary of the Wayne County Medical Society; served during the World War; on the staff of the Goldsboro City Hospital, where he died, January 3, of angina pectoris, aged 34.

Reuben F. Eldridge, Dawson, Iowa; State University of Iowa College of Medicine, Iowa City, 1882; member of the Iowa State Medical Society; aged 68; died, January 3, at the Kings Daughters Hospital, Perry, of injuries received in an automobile accident.

Thomas S. Adams, Baton Rouge, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1900; member of the Florida Medical Association; for many years member of the state board of health; aged 61; died, January 1.

George Wilbur McGregor, Littleton, N. H.; Dartmouth Medical School, Hanover, 1878; member of the New Hampshire Medical Society; formerly member of the board of health; aged 72; died, Nov. 8, 1925, following a long illness.

Henry Charles Hoch, Cincinnati, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1908; aged 60; died, Dec. 9, 1925, at a hospital in Iowa City, following an operation for carcinoma of the throat.

Reuben B. Jackson, Mexia, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1886; member of the State Medical Association of Texas; aged 66; died, January 1, of heart disease.

Harris Day ✠ Branchville, N. J.; Medical Department of the University of the City of New York, 1893; past president of the Sussex County Medical Society; aged 58; died, Dec. 1, 1925, of cerebral hemorrhage.

Samuel K. Smith ✠ Port Huron, Mich.; Medical Department of Columbia College, New York, 1890; past president of St. Clair County Medical Society; aged 62; died, January 1, of cerebral hemorrhage.

John Joseph Moore ✠ Pottsville, Pa.; Medico-Chirurgical College of Philadelphia, 1905; served in the M. C., U. S. Army, during the World War; aged 43; died, Dec. 31, 1925, following a long illness.

Charles Gordon Fuller ✠ Chicago; Chicago Homeopathic Medical College, 1881; formerly on the staff of the Evanston (Ill.) Hospital; aged 69; died, January 17, at Pass Christian, Miss., of heart disease.

Philemon Jenkins Macon, Warrenton, N. C.; University of Maryland School of Medicine, Baltimore, 1883; formerly member of the state legislature and board of education; aged 66; died, Dec. 27, 1925.

Edward Ross Elliott, Montgomery, N. Y.; Medical Department of the University of the City of New York, 1875; member of the Medical Society of the State of New York; aged 72; died, January 7.

Geiger A. Burch, Jacksonville, Ga.; Atlanta College of Physicians and Surgeons, 1901; formerly member of the board of education; aged 53; died, recently, at Las Cruces, N. M., of tuberculosis.

Louis Joachim Marnitz, Chicago; Bennett Medical College, Chicago, 1912; member of the Illinois State Medical Society; aged 58; died, Oct. 14, 1925, of cerebral hemorrhage and arteriosclerosis.

Samuel Henry Garvin, Detroit; University of Louisville School of Medicine, 1861; Bellevue Hospital Medical College, New York, 1865; Confederate veteran; aged 86; died, Dec. 29, 1925.

William R. Smith, Red Level, Ala.; University of Alabama School of Medicine, Tuscaloosa, 1886; member of the Medical Association of the State of Alabama; aged 70; died, Dec. 6, 1925.

Christian E. Jauss, Harrisburg, Pa.; Jefferson Medical College of Philadelphia, 1882; member of the Medical Society of the State of Pennsylvania; aged 66; died, in December, 1925.

James Law ✠ New York; Medical Department of the University of the City of New York, 1891; aged 70; died, Dec. 26, 1925, of chronic myocarditis and dilatation of the heart.

Addison Key Bell, Madison, Ga.; Medical Department of the University of the City of New York, 1885; member of the Medical Association of Georgia; aged 64; died, January 1.

Joshua W. Meshew, Barlow, Ky.; University of Louisville School of Medicine, 1889; member of the Kentucky State Medical Association; aged 62; died suddenly, January 2.

Edward L. Rose ✠ Port Arthur, Texas; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1909; county health officer; aged 54; died, Dec. 16, 1925.

Robert Allan Lee, Frobisher, Sask., Canada; Grand Rapids (Mich.) Medical College, 1902; Queen's University Faculty of Medicine, Kingston, Ont., 1904; died, Dec. 5, 1925.

Charles Pierce Davenport, Hartford, Ark.; Vanderbilt University Medical Department, Nashville, 1889; member of the Arkansas Medical Society; aged 72; died, January 1.

Walter Lovejoy, Lime, Ore.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; College of Physicians and Surgeons, Chicago, 1883; aged 71; died, January 1.

George R. Farra, Corvallis, Ore.; University of Louisville (Ky.) School of Medicine, 1877; member of the Oregon State Medical Society; aged 82; died, Dec. 27, 1925.

James Bassett Rawlings, Lawrenceville, Va.; Medical College of Virginia, Richmond, 1889; member of the Medical Society of Virginia; aged 59; died, January 1.

William George Bechtold, Breese, Ill.; Missouri Medical College, St. Louis, 1884; died, January 6, at St. Elizabeth's Hospital, Belleville, of cerebral hemorrhage.

Daniel W. Ward, Forest Grove, Ore.; Cooper Medical College, San Francisco, 1878; aged 80; died, Dec. 13, 1925, of injuries received in an automobile accident.

John Francis Hunter, Mamaroneck, N. Y.; Bellevue Hospital Medical College, New York, 1889; formerly village president; aged 60; died, January 1.

Thomas Henry Lewis ✠ Chicago; Chicago Medical College, 1896; on the staff of St. Luke's Hospital, where he died, January 16, of bronchitis, aged 53.

Melville Logan Casselberry, Philadelphia; Homeopathic Medical College of Pennsylvania, Philadelphia, 1853; aged 95; died, January 3, of senility.

Thomas F. Britt, Lincoln, Neb.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1885; aged 69; died, Dec. 27, 1925, at a local hospital.

Samuel Chambers Bridgewater, Dixon Springs, Tenn.; University of Nashville Medical Department, 1877; aged 69; died, January 2, at Nashville.

John Downs, Fort Madison, Iowa; College of Physicians and Surgeons, Keokuk, 1878; aged 71; died, January 2, following a long illness.

Hamilton Holliday, Fort Edward, N. Y.; Albany Medical College, 1884; aged 74; died, January 1, at Schuylerville, of cerebral hemorrhage.

Robert O. Broadway, Fountain, Colo.; Kentucky School of Medicine, Louisville, 1893; aged 58; died, Dec. 6, 1925, at Granite City, Ill.

Lemuel L. Long, Toulon, Ill.; Jefferson Medical College of Philadelphia, 1883; aged 73; died, January 14, of heart disease.

John H. Cushenberry, Girard, Kan.; St. Louis Medical College, 1872; aged 72; died, Dec. 19, 1925, following a long illness.

Hedley Leeming Anderson, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1868; died, Nov. 11, 1925.

Lawrence C. McCabe, Portland, Ore.; Jenner Medical College, Chicago, 1898; aged 62; died, Dec. 22, 1925.

The Propaganda for Reform

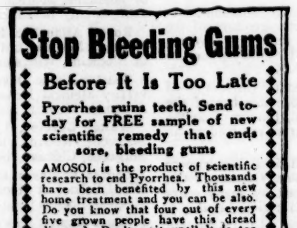
IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

AMOSOL DECLARED A FRAUD

A Pyorrhea Cure Put Out of Business by the Post Office Department

On January 16, 1926, the Post Office Department declared that the concern known as the Strong Laboratories of Liberty, Missouri, was engaged in conducting a fraudulent scheme through the mails and issued a fraud order against it. Strong Laboratories was a trade name used by Henry Strong Smith and his wife, Lourania N. The name was adopted by Mrs. Smith, who started the business in 1922 in Chicago. Later the concern was moved to Kansas City, Mo., and still later to Liberty, Mo., about thirteen miles from Kansas City.

Amosol, the nostrum exploited by the Smiths, was an alleged cure for pyorrhea. It was described in the advertising as a "miracle," a "new scientific discovery" that "kills pyorrhea germs and heals gums quickly." Victims were reached, of course, by advertising. Some advertising was done in newspapers, but the bulk of the business was secured by sending out post cards addressed to individuals on "sucker lists." Those who answered the advertisements or post cards received form letters telling them that Amosol was a "great scientific discovery," the "result of years of study and reseach" — statements which the Smiths knew were false and fraudulent. During the height of exploitation the Smiths received about five hundred letters a day and took in $4,000 a month.


Stop Bleeding Gums
Before It Is Too Late
Pyorrhea ruins teeth. Send today for FREE sample of new scientific remedy that ends sore, bleeding gums
AMOSOL is the product of scientific research to end Pyorrhea. Thousands have been benefited by this new home treatment and you can be also. Do you know that four out of every five grown people have this dread disease? Don't wait until it is too late. If your breath is offensive to others; if your gums are sore and bleed easily; if they are spongy and flabby and have begun to fall away from the teeth—take care! Pyorrhea has started its deadly work. If you can see these symptoms, then you KNOW something has to be done, and done quickly, if you want to save your teeth—or else, one by one, they will loosen and fall out, or have to be pulled. But if you know it in time, pyorrhea is not hopeless; you may have tried everything without success, but do not despair AMOSOL helps thousands daily. Let it help you. Simply send your name and address to
Strong's Laboratories, Room 231
111 N. Market Street, Chicago, Ill.
Chi. American 5/20/22

The postal inspector who investigated this fraud was told by Henry Strong Smith that he got the idea of exploiting this scheme from a similar swindle put out by the Moore Medicine Laboratories. (The Moore concern was declared a fraud by the postal authorities, Aug. 27, 1925, and the case reported in THE JOURNAL, Sept. 26, 1925.) Smith said that he procured a sample of the Moore nostrum, had it analyzed, and then prepared a formula from which Amosol was made. Smith also admitted that he copied the advertising literature of the Moore Medicine Laboratories. He admitted, too, that the preparation that he sold as a new, scientific discovery, the result of years of study and research, was in reality what is commercially known as "stock dip." Amosol had the following composition:

"Creosote	45 lbs.
"Rosin	3 lbs.
"Hot water	12 lbs.
"38% caustic soda	12 lbs."

To this large amount of material were added a few ounces of black oil compound, 1 ounce of oil of peppermint and 1/10 of 1 per cent fluid extract of ipecac. Smith's only claim to a knowledge of drugs was that he had studied chemistry in Beloit College, Wisconsin, and had formerly been an assistant pharmacist in the same town.

The postal authorities submitted specimens of Amosol to the Bureau of Chemistry, which analyzed it and reported that it was an ordinary cresol emulsion such as is used as a disinfectant for killing lice, ticks, etc. The chemists showed further that while the mixture in sufficient concentration was a germicide, it could not be kept in the mouth in such concentration sufficiently long to kill any material number of bacteria.

In March, 1925, when the inspector called on the promoters of this fraud at their place of business at Liberty, Missouri, it was found that in addition to Amosol the Smiths were engaged in selling through the mails the following preparations:

"Solite" (a tooth powder).
"Dermax" (for eczema).
"Loria" (for asthma).
"Jeng" (for kidney trouble).
"Corn Cream" (for the instant removal of corns).
"Smile-Lax" (a laxative).
"Night Cap Cold Remedy."

Later Smith advised the inspector that they had discontinued selling all remedies except Amosol, Solite and Corn Cream.

In the Amosol advertising matter a "Dr. Strong" is referred to. There was no such person connected with the business. In fact, the name Strong in Strong Laboratories is the middle name of H. Strong Smith. Some of the form letters sent to prospective victims of Amosol were signed "L. Foree Nourse." This, it seems, was Mrs. Smith's maiden name, and was used rather than the name Smith because it was more "classy." Of course, the Strong Laboratories had no laboratories and employed no physicians, chemists or pharmacists.

On Sept. 16, 1925, the Strong Laboratories were forwarded a memorandum of the charges, and the two Smiths were called on to show cause on Oct. 6, 1925, why a fraud order should not be issued. On that day L. L. Hamner, a Washington attorney, requested a continuance, and the hearing was postponed to October 16. On that date the attorneys asked for a further continuance. Owing to the congestion of the calendar of fraud order cases, no early date was available to which the case could be postponed, and the government suggested that if the Smiths would agree to have their mail held by the postmaster at Liberty, Mo., pending the hearing, a further continuance would be granted. The attorney agreed to that arrangement but asked time to communicate by telegraph with his clients. Later in the day the attorney informed the government officials that he had been unable to obtain authority from the Smiths to have the mail held. The attorneys were finally advised that the case had been continued to Jan. 12, 1926.

On October 21, 1925, Lourania N. Smith attempted to forestall the government's action by applying to the United States District Court at Kansas City for an injunction against the postmasters of Chicago, Kansas City and Liberty, to restrain them from enforcing a fraud order that was alleged had been decided to be issued by the Post Office Department on October 16. The judge denied the application, stating that the petition failed to set out the basis of the fraud order.

On January 11, Mr. Hamner again called on the postal authorities at Washington and exhibited a letter signed by Lourania N. Smith. This letter declared that the "business of Strongs Laboratories has practically ceased and there is practically no mail being received by Strongs Laboratories at Liberty, Missouri." Mrs. Smith's letter further declared that she had authorized the postmaster at Liberty to mark on each letter or other mail addressed to Strong's Laboratories the words "out of business" or "defunct" and return all such letters or mail matter to the senders. It was also suggested

that if the Post Office Department would permit Mrs. Smith to discontinue the business instead of issuing a fraud order she would ask that the injunction suit be dismissed. The postal authorities very rightly informed the attorneys for the Smiths that in view of all the circumstances, the matter would be handled in the regular course and that they could appear on January 12, the date set for the hearing. On that day the matter was taken up in formal hearing with the result that Judge Horace J. Donnelly, solicitor for the Post Office Department, recommended to Postmaster General Harry S. New that a fraud order be issued against this concern. It was issued.

Correspondence

LABORATORY AID IN WHOOPING COUGH

To the Editor:—Apropos of your editorial of January 16, permit me to state that, had Dr. G. F. Powers taken the trouble to review the literature on whooping cough, he would have been spared the arduous labor of proving an observation which I made clinically several years ago. In my book on Diseases of Children, published in 1921, page 433, appears the following definite statement: "I wish to direct particular attention to the marked antispasmodic value of calcium and sodium hypophosphites in mitigating and often completely arresting the 'whoop' of pertussis. I have been led to administer these drugs after noting the close resemblance between the manifestations of laryngeal spasm of spasmophilia (spasmus glottidis) and those of whooping cough, and observing the beneficent action of lime and soda hypophosphites in spasmophilia. Furthermore, it seemed to me quite plausible to assume, that, as is claimed in spasmophilia (e. g., tetany), the whoop of pertussis may also be due to some functional disturbance in the parathyroids arising traumatically as the result of the harassing cough during the earlier stages of pertussis." I entirely disagree with Dr. Powers that the spasm in whooping cough, in these cases, is due to rachitis, since the convulsions are most common among very young infants, nay, even the newly born; i. e., at an age when rickets is of very exceptional occurrence.

HERMAN B. SHEFFIELD, M.D., New York.

HEMATOMA OF RECTUS ABDOMINIS MUSCLE

To the Editor:—The report by Culbertson (THE JOURNAL, Dec. 19, 1925), of cases of hematoma occurring spontaneously in the sheath of the rectus abdominis muscle, leads me to report briefly the following series. The cases differ from Culbertson's in that suppuration occurred in every instance. I reported on these cases orally to the Denver Clinical and Pathological Society shortly after their occurrence, and they were referred to by Ingraham in his discussion of Culbertson's paper.

The seven cases, in two of which a double lesion was noted, all occurred in inmates of army hospitals in the southwest quarter of the United States, during the months of the prevalence of the great influenza epidemic. In every instance the patient had been very ill, with cough of extreme severity, and in practically all a diagnosis of influenzal bronchopneumonia had been made. A rounded swelling the size and shape of the larger end of an egg was present in one of the lower segments of the rectus muscle, tender and painful, but without visible ecchymosis. In two of the cases the lesion was bilateral, in corresponding segments of the two rectus muscles.

All the patients were operated on by surgeons in the respective hospitals; in all, creamy pus was evacuated, and recovery was prompt and uneventful, so far as I know. I never received reports of the laboratory examinations of the pus, but my impression is that one was said to be a streptococcic infection, and it is reasonable to believe that others were.

It seems probable that the origin of these cases was as follows: As the result of the severity of the cough, rupture of muscle fibers occurred, hemorrhage took place into the injured segment of the rectus muscle, and suppuration followed from a blood-stream infection associated with the bronchopneumonia.

I have heretofore refrained from reporting these cases in writing, because of the fragmentary nature of my data concerning them. My only excuse is that, as consultant in internal medicine to sixteen great hospitals widely scattered in many states, I had neither time nor opportunity to follow up individual cases.

I observed an exactly similar abscess in a young woman, with Dr. T. J. Danahey in Denver, just after my return to practice.

In connection with Culbertson's interesting report, it seems proper that these scanty and incomplete observations should be placed on record.

As the hospitals in which the cases were seen had a peak capacity of about 30,000 beds, the relative incidence of these abscesses was extremely small.

J. N. HALL, MD., Denver.

IRON IN ANEMIA

To the Editor:—I always read the editorials in THE JOURNAL with interest and consider them of great value to the profession. In an editorial, Oct. 10, 1925, on iron in therapeutics, the impression is left with the reader that iron is of no value in anemia. I may have been guilty at an earlier time, but recently (*Am. J. Physiol.* **72**:395 [May] 1925) Robscheit-Robbins and I furnished experimental data indicating that severe prolonged anemia due to hemorrhage may so deplete the iron reserve of the body that inorganic iron may be potent. My earlier experiments, like those of Drs. Williamson and Ets, were concerned with short period anemia experiments due to a few bleedings. Under these conditions, iron gives no evidence of beneficial results. These findings on dogs have been confirmed by many other workers using dogs and other animals. The paper of Williamson and Ets is the last of a considerable series.

It seems to me unfortunate that the editorial should not present more complete data on the question under dispute. If work on animals has any significance in relation to human beings, we can say without hesitation that inorganic iron certainly does have an influence in long standing severe anemias that it does not have in short anemias.

GEORGE H. WHIPPLE, M.D., Rochester, N. Y.

"THE ULTRAVIOLET RAY AS A PROPHYLACTIC AGAINST RADIODERMATITIS"

To the Editor:—In an article entitled "The Ultraviolet Ray as a Prophylactic Against Radiodermatitis" by George C. Andrews and the writer, published in THE JOURNAL, Nov. 28, 1925, several errors were made when quoting from an article by R. H. Rulison entitled "The Prophylaxis of Roentgen-Ray Overdosage," published in THE JOURNAL, Nov. 8, 1924.

Rulison's patient was a woman instead of a man, as quoted by us. The roentgen ray was applied through a one inch aperture in a lead screen. We stated that a very small area of skin had been irradiated. The ultraviolet ray was of a strength sufficient to cause a slight erythema after four daily exposures. We stated that the roentgen-ray treatment was followed by very vigorous treatment with the Kromayer lamp.

Rulison estimated the dose of roentgen rays administered to his patient as 4½ units. We stated that several times the standard unfiltered erythema dose (1 unit) had been administered. We quoted Rulison's factors as $\frac{8 \times 5 \times 3' 54''}{10 \times 10}$. They were $\frac{8 \times 5 \times 3' 54''}{8 \times 8}$.

We failed to mention the fact that salicylic acid plaster had been applied to the area of skin previous to irradiation.

We inferred and stated that Rulison thought that ultraviolet irradiation had prevented a severe radiodermatitis in his patient. There is no definite statement to this effect in his article.

As a result of the foregoing errors of commission and omission, one might assume that we had questioned Rulison's judgment, ability and accuracy. Such an assumption would be unjust and erroneous. Our article simply represented an attempt to prove that ultraviolet irradiation is of no practical value as a prophylactic against acute radiodermatitis, and the errors herein mentioned are irrelevant to our findings and conclusions.

GEORGE M. MACKEE, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BURNSIDE'S PURIFICO

To the Editor:—Can you give me any information on Dr. E. E. Burnside's Purifico nos. 1, 2 and 3, manufactured and sold by C. W. Diffin, Ashville, N. Y., and Bridgeburg, Ont.? I have a patient who is in a most pitiful condition, having unbounded confidence in this remedy for the cure of cancer.

ALAN BART JACKSON, M.D., Sincoe, Ont.

ANSWER.—Purifico is a fraud. It comes in the form of three liquids, "No. 1," "No. 2" and "No. 3." "Purifico No. 1," in addition to 10 per cent alcohol with sugar and a small amount of glycerin, contains potassium iodide, cinchona alkaloids, piperine and probably senna. "Purifico No. 2" is essentially the same thing, minus the senna. "Purifico No. 3" contains 14 per cent alcohol, sugars, valerian, piperine and tannic acid. In 1917 the government prosecuted Charles W. Diffin and Pearl Diffin, who were the owners of the Purifico Company, on the charge that their claims that this stuff would cure cancer were fraudulent. These quacks made no attempt to justify their claims, but pleaded guilty and were fined. An abstract of the government's report appears in "Nostrums and Quackery" volume 2. In June, 1924, the United States government went after these fakers with a fraud order and debarred the nostrum from the use of the mails. After Dr. Jackson's inquiry was received, a letter was written to Charles W. Diffin of Ashville, N. Y., asking for particulars about his cure for cancer. A reply came back from one E. S. Loomis, stating that Diffin was now in California and that the Purifico business had been sold to the Chautauqua Chemical Corporation of Ashville, N. Y. A letter was then written to the Chautauqua Chemical Corporation asking for information about the "sure cure for cancer." In due time a reply came from this concern regarding Purifico. The company states: "We do not claim Purifico a specific in any particular disease and do not guarantee to cure." All direct reference to cancer is eliminated from the printed matter that the concern sent. It is obvious, however, that they are still trading on the claims, made for many years, that Purifico is a cure for cancer.

ETHYLENE OR NITROUS OXIDE

To the Editor:—Does ethylene have any particular advantage over nitrous oxide as an anesthetic? I have had considerable experience in administering ether, but do not care to experiment with ethylene. What would you consider the most suitable apparatus for the administration of ethylene to be used in a small hospital, and what would probably be the average cost per hour, using ethylene?

M.D., North Carolina.

ANSWER.—Ethylene produces greater relaxation than nitrous oxide. Furthermore, much higher percentages of oxygen can be administered with it; therefore, cyanosis during anesthesia is not an accompaniment, as is the case with nitrous oxide. Any gas machine that will deliver nitrous oxide satisfactorily can be used for the administration of ethylene-oxygen. The cost of ethylene is about the same as that of nitrous oxide. According to New and Nonofficial Remedies, the advantages over nitrous oxide are stated to be equally rapid but more pleasant induction, satisfactory relaxation without cyanosis or sweating, and rapid recovery. The disadvantages of ethylene are the odor, which is slightly offensive to some, the inflammability of the gas, and apparently an increased oozing of the wounds during but not after its use.

TREATMENT OF HIGH BLOOD PRESSURE—LIVER EXTRACT

To the Editor:—1. Allow me to ask your opinion in regard to calcium chloride and potassium chloride in the article on the treatment of arterial hypertension abstracted in THE JOURNAL, Oct. 31, 1925, p. 1428. What would you consider contraindicated their use? The doses of both the drugs seem enormous. I was a little slow in considering it in practice, awaiting your advice to see whether you consider it perfectly safe to use from 90 to 180 grains a day, as suggested in the article. 2. Is there anything new in the line of liver extract, and what has been accomplished by it? Where can it be procured? By whom is it made? Is it safe?

JOHN W. CROWE, M.D., Washington, D. C.

ANSWER.—1. Addison and Clark (*Canad. M. A. J.* **15**:913 [Sept.] 1925) used the following prescription:

		Gm. or Cc.
℞	Calcium chloride	60
	Compound tincture of cardamom	30
	Syrup to make	240

Mix. Label: From 2 to 4 drachms in water three times daily after meals.

If at the end of a month's time no fall in pressure occurred, potassium chloride was substituted for the calcium chloride in the same dose. Of forty-five cases of high blood pressure, the pressure was reduced in 57.7 per cent by calcium chloride and in 13 per cent by potassium chloride. The main objections to giving calcium chloride in these doses are the gastro-intestinal disturbances liable to be produced. These are minimized by giving the dose after meals freely diluted with water and followed by a glass of milk. Another objection is the liability of causing an acidosis with calcium chloride. Acidosis does not occur from potassium chloride. While the doses are large, no harm is likely to result, if they are given with proper precautions.

2. Liver extract was discussed in THE JOURNAL, July 18, 1925, page 194, and "The Effects of Hepatic Extract on High Blood Pressure" by Ralph H. Major, July 25, 1925, page 251. No liver extract has been accepted by the Council on Pharmacy and Chemistry for New and Nonofficial Remedies, and, so far as we know, liver extracts are not generally available in this country.

AIR EMBOLISM

To the Editor:—A man, quarreling with a woman, stabbed her with a knife; it entered the fifth intercostal space and perforated the heart in the right ventricle. The necropsy showed frothy blood in the mediastinum; the heart was empty and the pericardium was full of blood. When we opened the skull, all the arteries of the brain were full of air. How do you account for that?

THOMAS GÄERSTE, M.D., Curaçao, Dutch West Indies.

ANSWER.—If the necropsy was made some time after death and if the body in the meantime had been lying in a warm place, it is possible that the gas resulted from bacterial action after death. On the other hand, if the necropsy was made soon after death under circumstances precluding bacterial gas production, the air in the arteries of the brain must have been the product of air embolism. The fact that there was frothy blood in the mediastinum suggests at once that the lung was cut by the knife and that air escaping into the mediastinum produced traumatic emphysema; from the cut in the lung, air may have entered branches of the pulmonary veins and thence the systemic circulation. This would be the only obvious route unless perchance the stab in the right ventricle had perforated also the wall of the left ventricle, thus making it possible for air in the mediastinum to be forced directly into the left side of the heart.

DWARF TAPEWORM

To the Editor:—I should like to have the latest information and treatment for dwarf tapeworm. I have used male fern after the usual text book method, but find that the ova persist in a number of cases treated. Please use initials.

E. E., M.D., South Carolina.

ANSWER.—Failure of one course of treatment in infestation with these worms is not surprising; this condition usually requires periodic repetition of treatment in progressively

increasing strength. The gastro-intestinal tract should be emptied as much as possible by confining the patient to a clear liquid diet (coffee, soup, lemonade) for a day or two, together with the administration of calomel and saline cathartics. There is no objection to giving the patient on the morning of the treatment, from half an hour to an hour before its administration, a cup of sweetened coffee. Doses of 6 to 8 and not more than 10 Gm. of oleoresin of aspidium may be safely administered to a well nourished adult, probably best in the form of capsules, 1 Gm. being given every five or ten minutes until the entire dose is taken. One or two hours after this, a laxative, such as magnesium sulphate, is to be administered. Scrupulous personal cleanliness so as to avoid reinfestation should also be insisted on.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 2. Sec., Dr. Harry C. De Vighne, Juneau.

CALIFORNIA: Los Angeles, March 8-11. Sec., Dr. Charles B. Pinkham, Room 906, Forum Bldg., Sacramento.

CONNECTICUT: Basic Science Board, New Haven, Feb. 13. Chairman, Mr. Charles M. Bakewell, Box 1895, Yale Station, New Haven. Regular Board, Hartford, March 9-10. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Board, New Haven, March 9. Sec., Dr. Edwin C. M Hall, 82 Grand Ave., New Haven.

KANSAS: Topeka, Feb. 9. Sec., Dr. Albert S. Ross, Sabetha.

MAINE: Portland, March 9-10. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MASSACHUSETTS: Boston, March 9-11. Sec., Dr. Frank M. Vaughan, 144 State House, Boston.

MISSOURI: Jefferson City, March 9-11. Chief, Licensure, Dr. Ross Hopkins, Capitol Bldg., Jefferson City, Mo.

NATIONAL BOARD OF MEDICAL EXAMINERS: Part I, Feb. 10-12; Part II, Feb. 11-12, in Class A Medical Schools. All applications must be received on or before Jan. 15. Sec., Dr. J. S. Rodman, 1600 Walnut St., Philadelphia.

NEW HAMPSHIRE: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.

OKLAHOMA: Oklahoma City, March 9-10. Sec., Dr. J. M. Byrum, Shawnee.

PHILIPPINE ISLANDS: Manila, Feb. 9. Sec., Dr. Jose V. Gloria, 686 Rizal Ave., Manila.

PORTO RICO: San Juan, March 2. Sec., Dr. D. Biascoechea, Box 804, San Juan.

VERMONT: Burlington, Feb. 9-11. Sec., Dr. W. Scott Nay, Underhill.

WYOMING: Cheyenne, Feb. 1-3. Sec., Dr. G. M. Anderson, Cheyenne.

North Carolina June Examination

Dr. K. P. B. Bonner, secretary of the North Carolina Board of Medical Examiners, reports the written examination held at Raleigh, June 22-27, 1925. The examination covered 16 subjects and included 70 questions. An average of 80 per cent was required to pass. Of the 81 candidates examined, 80 passed and 1 failed. Eighteen candidates were licensed by reciprocity and 1 by endorsement of his credentials. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
College of Medical Evangelists	(1923)	85.7
Georgetown University School of Medicine	(1925)	85.6
Howard University School of Medicine	(1924) (1925) 80.1, 86.9, 87.3, 88	88.9
University of Georgia Medical Department	(1924)	86.4
University of Illinois College of Medicine	(1923)	85.3
Tulane University of Louisiana School of Medicine	(1925)	89
Johns Hopkins University Medical Department	(1923)	89.4
University of Maryland School of Medicine	(1921) (1924) 83.7, 87.3, (1925) 82.1, 85.9, 86.9, 87.1, 87.7, 88.1, 88.3, 88.9, 89.6	83.6,
Ohio State University College of Medicine	(1922)	88.6
University of Cincinnati College of Medicine	(1925) 89.6, 91.9,	91.9
Jefferson Medical College of Philadelphia	(1923) (1925) 85.3, 85.4, 85.9, 86, 86.6, 87.4, 87.9, 88.9, 89.6, 91, 91.3, 93.4	92
University of Pennsylvania School of Medicine	(1923) (1924) 88.1, 90.6, (1925) 86.9, 87, 88, 88.4, 88.7, 89, 89.3, 90, 91.4, 92, 94.7	85.4,
University of Pittsburgh School of Medicine	(1923)	85.4
Medical College of the State of So. Carolina	(1925) 83.4,	84, 88.3
Meharry Medical College	(1924) 83.6, (1925)	82.4
Vanderbilt University School of Medicine	(1925) 82.3,	84.4
Baylor University College of Medicine	(1925)	85.6
Medical College of Virginia	(1925) 80.7,	84.1, 85, 85.3, 86.1, 86.3, 87.3, 88.7, 91.4, 91.6, 92
University of Virginia Department of Medicine	(1924) (1925) 85.9, 86.9, 88.3, 90.6	87.7,

FAILED

College	Year Grad.	Per Cent
Ohio State University College of Medicine	(1923)	76.6

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
George Washington University School of Medicine	(1920)	Dist. Colum.
Atlanta School of Medicine	(1909)	Georgia
Emory University School of Medicine	(1920)	Georgia
Indiana University School of Medicine	(1913)	Indiana
University of Louisville School of Medicine	(1910)	Kentucky
University of Maryland School of Medicine	(1911)	S. Carolina
University of Michigan Medical School	(1899), (1908)	Michigan
Columbia University College of Medicine	(1919)	New York
Western Reserve University School of Medicine	(1920)	Ohio
Medico-Chirurgical College of Philadelphia	(1916)	Penna.
Medical Coll. of the State of South Carolina	(1911), (1915)	S. Carolina
University of the South Medical Department	(1900)	S. Carolina
Vanderbilt University School of Medicine	(1919)	Tennessee
Medical College of Virginia	(1916) So. Car., (1919), (1920)	Virginia

ENDORSEMENT OF CREDENTIALS

College	Year Grad.	Endorsement with
University of Pennsylvania School of Medicine	(1922)	N. B. M. Ex.

Book Notices

SKULL FRACTURES: ROENTGENOLOGICALLY CONSIDERED. By William H. Stewart, M.D., Roentgenologist to the Lenox Hill and Harlem Hospitals, New York City. With Surgical Comments by William H. Luckett, M.D., Directing Surgeon, Lutheran Hospital. Annals of Roentgenology. Volume six. Cloth. Price, $12. Pp. 264, with 132 illustrations. New York: Paul B. Hoeber, Inc., 1925.

In this volume the author presents a series of master roentgenograms of the skull. One group depicts all the normal markings of the frontal, lateral, occipital and basilar regions. Another group represents the various types of fracture, both fissured and depressed. Together, they supply a diagnostic guide for the roentgenologist as well as the surgeon, which he may use either as a study in injuries to the head or for comparison with an individual case of a similar nature. A careful study of these plates will be of immense help in differentiating between a fracture line and a normal skull marking. Because of the difficulty of detecting a fracture line in the skull, the author states that four or five views are necessary—two lateral, one of each side, a frontal and an occipital; and a fifth view of the base, if one has perfected that technic. Besides these flat views, a stereoscopic examination should also be made. With this painstaking examination, from 80 to 90 per cent of all fractures of the skull can be detected. A chapter is devoted to the roentgenographic technic. Careful directions are given by the author as to the position of the patient on the table, method of fixation of the head, location of the tube, spark gap, use of the Potter-Bucky diaphragm, and time exposure. The technic as to these details is well shown by photographic illustrations. Another chapter is devoted to the examination of the skull with the portable apparatus for patients that are in desperate condition in the home or in the hospital when it is inadvisable to move them. Another important chapter deals with the interpretation of roentgenograms of the skull, differentiating natural markings, such as suture lines, ridges, sinuses, fissures and diploetic spaces. A number of good illustrations present unusual venous markings from which fracture lines and the effect of increased intracranial tension must be differentiated. Finally, there is a discussion of the time factor in the disappearance of roentgenographic evidence in fractured skulls that is important in medicolegal work. How long does a fissured fracture show in a roentgenogram? The author states that in simple fissure in children the evidence of fracture may disappear within six months, and cites three cases in evidence. In the adult, simple linear fracture lines may remain visible for three years. On the other hand, a hypertrophic osteitis may occur along the fracture line, and this may be rendered more distinct as time goes on. In cases in which there has been much separation of the fragments, as in diastatic fracture, it would be safe to say that they could be detected as long as five years after the accident. Depressed fractures, of course, are permanent, unless the depression is corrected by operation. If this were all that is included in the book, little of criticism and much of commendation would be in order. But in a chapter

on surgical comments and in suggestions as to diagnosis and surgical treatment that are present throughout the volume, the author lays too much stress on fracture of the skull and not enough emphasis on injuries to the brain and meninges. In practically all fissured fractures, and these are the most common, the injury to the brain must be diagnosticated as soon as possible by procedures other than roentgenographic, especially lumbar puncture. With this in mind, one will find the book a helpful guide.

SIMPLIFYING MOTHERHOOD. Being a Handbook on the Care of the Baby During the First Year. By Frank Howard Richardson, A.B., M.D., Regional Consultant in Diseases of Children to the New York State Department of Health. Containing a Chapter on Breast Feeding. By Isaac A. Abt, Professor of Diseases of Children, Northwestern University Medical School. Cloth. Price, $1.75. Pp. 263, with illustrations. New York: G. P. Putnam's Sons, 1925.

This is a satisfactory book for mothers and for every one who has the care of babes. It is not encumbered with dogma and undemonstrable theories, but the sensible and practical management of the child is insisted on. It would seem that the rule requiring the babe to empty completely one breast at each nursing, no matter how long it takes, should be modified, since some breasts are so uberous that several infants could be fed and yet a considerable residue would remain. The nursling can easily get his fill in twenty minutes if he is hungry, and the mother would have a longer period of rest. The only theory advocated in and out of season is that every healthy mother can be made to nurse her babe. Although the desirability of this is admitted, yet it certainly must happen that many women with high purpose and exacting industry will fail. Some breasts are large and fat but contain apparently small or inactive glands that will not or do not respond to stimulation. These breasts are the despair of the pediatrician, and apparently no augmentation of rest and food produces an appreciable change. It would be delightful to learn that the author's thesis would prove true in these cases. The mother, the nurse or the special student will find a wealth of information in this little volume.

ETUDES NEUROLOGIQUES. Par Georges Guillain, Professeur de clinique des maladies du système nerveux à la Faculté de médecine de Paris. Second edition. Paper. Price, 26 francs. Pp. 360, with 52 illustrations. Paris: Masson et Cie, 1925.

This volume constitutes the second series of neurologic studies, the first of which, published in 1922, has been exhausted. Some of the headings under which articles appear are: symptomatology; pathology of brain and spinal cord; multiple sclerosis; secondary degenerations; epidemic encephalitis; syndromes of postencephalitic parkinsonism, and Parkinson's disease. The cases forming the basis for these articles were presented before medical societies or were reported in medical bulletins and journals. The author collected these case reports and has carefully edited and arranged them under appropriate headings, thus saving the reader's energies in looking for them in separate journals. The articles are brief and concise, strongly reminding one of the several Leçons published in France since Charcot issued his celebrated Leçons du Mardi, based on the lectures he delivered Tuesdays at the Salpêtrière. This species of medical writing has become quite popular in France and has found many imitators in other countries. It must be admitted that this is an easy way of acquiring information on clinical subjects—a so-called postgraduate course by letters. Especially is this true for the study of neurology, a specialty in which one has to think in terms of anatomy and physiology, subjects which are rather dry when studied apart from clinical neurology. The author has not only succeeded in making anatomy and physiology interesting, but he has also included in this feat chemistry and physics, as well as the other medical specialties, provided he needed them to throw more light on the case under discussion. Several new reflexes, first discovered by the author, are described; these have not yet found a place in modern textbooks. Some excellent descriptions of the pathologic anatomy of the brains and cords in cases that have been well studied during life are given. This book can be appreciated by both the neurologist and the general practitioner.

Miscellany

COMMITTEE REPORT ON ETHYL GASOLINE

The Special Advisory Committee, appointed by Surg. Gen. Hugh S. Cumming to determine whether or not there is a public health hazard involved in the manufacture and use of tetra-ethyl lead gasoline, has made public its report, which shows that "there are at present no good grounds for prohibiting the use of ethyl gasoline as a motor fuel, provided that its distribution and use are controlled by proper regulations." The report was the unanimous action of the committee, composed of Dr. W. H. Howell, chairman, of Johns Hopkins University; Dr. David Edsall, dean of the School of Public Health of Harvard University; Prof. C.-E. A. Winslow of Yale University; Dr. W. S. Leathers of Vanderbilt University; Dr. A. J. Chesley, state health officer of Minnesota; Dr. Julius Stieglitz of the University of Chicago, and Prof. Reid Hunt of Harvard University The actual conduct of the work was entrusted to Dr. J. P. Leake, Surgeon, U. S. Public Health Service. The committee was appointed as a result of a conference called by Surgeon General Cumming, May 20, 1925. As a result of that conference the manufacturers of ethyl gasoline stopped the sale of gasoline throughout the country. More than 300,000,000 gallons of gasoline had been distributed from February, 1923, to May, 1925. Serious cases of poisoning occurred in New Jersey and Ohio at plants where tetra-ethyl gasoline was manufactured.

The following three general conclusions are offered:

1. Drivers of cars using ethyl gasoline as a fuel, and in which the concentration of tetra-ethyl lead was not greater than 1 part to 1,500 parts by volume of gasoline, showed no definite signs of lead absorption after exposures approximating two years.

2. Employees of garages engaged in the handling and repairing of automobiles and employees of automobile service stations may show evidence of lead absorption and storage, as indicated by the lead content of the feces and the appearance of stippled cells in the blood. In garages and stations in which ethyl gasoline was used, the amount of apparent absorption and storage was somewhat increased, but the effect was slight in comparison with that shown by workers in other industries when there was a severe lead hazard, and for the periods of exposures studied was not sufficient to produce detectable symptoms of lead poisoning.

3. In the regions in which ethyl gasoline has been used to the greatest extent as a motor fuel for a period of between two and three years, no definite cases have been discovered of recognizable lead poisoning or other disease resulting from the use of ethyl gasoline.

So far as could be ascertained, all the reported fatalities and serious injuries in connection with the use of tetra-ethyl lead have occurred either in the process of manufacture or in the procedures of blending and ethylizing. Some lead was present in the air of the garages and work rooms whether the gasoline used contained lead or not; and in the sweepings of dust from the floors and benches there was a distinct amount of lead present, the figures running from 0.82 to 22.31 mg. per gram of dust, according to the time and place of gathering the sample. This emphasizes the importance of providing such rooms with adequate ventilation, and of keeping both floors and benches as free as possible from dust. Owing to the incompleteness of the data, it is not possible to say definitely whether the exposure to lead dust was greater in garages in which ethyl gasoline was used.

In closing, the committee states that, although based on most careful and conscientious investigations, its findings may be subject to the criticism that they have been derived from the study of a relatively small number of individuals who were exposed to the effects of ethyl gasoline for a period of time comparatively brief. A more extensive study was not possible on account of the limited time. With the experience obtained and the exact methods now available, it should be possible to follow closely the outcome of more extended use

of this fuel and to determine whether or not it may constitute a menace to the public health after prolonged use or under conditions not now foreseen. The committee urges that a suitable appropriation be requested from Congress for the continuance of these investigations under the supervision of the Surgeon General of the Public Health Service, and for a study of related problems connected with the use of motor fuels.

UNIFORM NARCOTIC DRUG ACT

"The committee having this matter in charge reported that it had had the benefit of the suggestions of the Bureau of Legal Medicine and Legislation of the American Medical Association, and it presented an act for consideration at this time, though it requested that it be referred back to the committee for further consideration, which was done. In the draft submitted no provision was made for the supervision and control of the addict, which many believe is an important part of any legislation of this kind. As a result of criticism of this omission, it is likely that there will be submitted as a supplementary act, at least to be adopted by those states which desire to do so, an act for the supervision and control of addicts."—MacChesney, N. W.: Progress on Uniform State Laws, *Am. Bar Association J.* **11**:808 (Dec.) 1925.

Medicolegal

Chiropractic and the Illinois Medical Practice Act

(People v. Walder (Ill.), 148 N. E. R. 287)

The Supreme Court of Illinois, in affirming a judgment of conviction of the defendant of violating the medical practice act, for which he was adjudged to pay a fine of $300, says that the offense for which he was prosecuted being the treating of human ailments without a license so to do, and not the treating of the ailments of any particular person, it was unnecessary to name in the indictment the persons treated. The defendant's objection to the validity of the medical practice act that the practice of chiropractic is a useful and harmless calling, which cannot be regulated by the state, was so clearly without merit that discussion of the question seems unnecessary. If a chiropractor can, by manipulation, move a dislocated vertebra so that the pressure on a nerve will be relieved and paralysis cured, he can by the same process dislocate a vertebra and cause a paralyzed condition. Any method of treating human ailments which, when practiced skilfully, can restore a diseased human body to health is capable of doing great harm when practiced without care or skill. A method of treating human ailments cannot be both useful and harmless. If it is sufficiently efficacious to be useful, it is at the same time capable of producing harmful results.

It was contended that the requirement that twenty-two months shall elapse between the time the student begins his eighteen months' course of study and the time he finishes his course is arbitrary and unreasonable. That portion of section 5 of the medical practice act of Illinois of 1923 applicable to the defendant requires that he shall pursue the studies necessary to fit him to practice chiropractic in a recognized college for three school years of not less than six months each. It is a usual provision in acts or rules governing the time during which studies shall be pursued for the securing of a professional education that a certain period of time elapse between the ending of one school year and the beginning of the next succeeding school year. It is generally conceded that it is proper for the legislature to prescribe minimum requirements of education for admission to examination for the purpose of securing a license to treat human ailments, and it is the province of the legislature to determine in the first instance how much time shall elapse between the time of beginning and the time of concluding the prescribed course of study. In making this requirement, the legislature must have in mind that the public should be protected from persons who do not have the necessary knowledge to treat human ailments. Every person may have occasion to consult a physician, but comparatively few persons can judge the qualifications of learning and skill which he possesses.

Any person who professes to practice any system of treating human ailments has to deal with those mysterious influences on which health and life depend, and no person can claim the right to enter that profession who does not have a knowledge of the human body, its complicated parts and their relation to each other, and a knowledge of the effect on the human body of substances which might cause sickness or destroy life. Whatever method of treating human ailments is used by a physician, he should be able to detect readily the presence of disease and prescribe appropriate remedies for its removal. Taking into consideration the subject-matter with which the legislature was dealing, this court is of the opinion that the requirements applicable to the limited practitioner are not subject to the charge of being arbitrary and unreasonable, but that they are liberal when compared with the requirements of the same act applicable to persons who desire to practice medicine in all its branches. The medical practice act of 1923 recognizes the different methods of treating human ailments, and prescribes reasonable and uniform regulations for testing the qualifications of persons who desire to practice medicine in all its branches, and of persons who desire to practice some limited form of treating human ailments. This act meets the constitutional objections which rendered void the earlier medical practice acts, and is valid legislation.

That there is a valid basis for exempting the officers of the medical corps of the army, the navy and the Public Health Service of the United States from the operation of the act is apparent. The competence of these physicians is assured by the exactions required of them before they can become commissioned in the service of the United States.

Unskilful Treatment Not an Issue in Injury Case

(O'Quinn v. Alston (Ala.), 104 So. R. 653)

The Supreme Court of Alabama holds that in this action to recover damages for personal injuries alleged to have been caused by the negligence of the defendant it was reversible error to permit his counsel to ask physicians questions which tended to support his theory that the plaintiff's injury had not been skilfully treated by his surgeon—that a part of his hand had been needlessly amputated, and thereby his injury needlessly and negligently aggravated. The information sought and obtained by these questions was not admissible, either in defense or as a matter of mitigation. They did not tend to show that the plaintiff had failed to exercise reasonable diligence in the selection of his surgeon, or that he had been negligent in caring for his own wound, or the intervention of any independent cause other than the alleged unskilful treatment by his surgeon. Nor was any evidence offered during the trial tending to establish any of these things. So then the only possible theory on which these questions were allowed was that the defendant was not answerable for the full measure of the plaintiff's injury and consequent suffering, if these had been aggravated by the unskilful treatment of his surgeon. This was error. In the circumstances stated, the defendant's negligence was the proximate cause of the plaintiff's injury to its full extent, and should have been so treated by the trial judge in his rulings; for, when one is injured by the negligent or wrongful act of another, and uses ordinary care in endeavoring to be healed and in the selection of medical and surgical help, but his injury is aggravated by the negligence or unskilfulness of the latter, the party causing the original injury will be responsible for the resulting damage to its full extent. Briefly stated, with reference to the facts of this case, various authorities show the reasons for the rule to be that the employment of a surgeon is to be regarded as a natural consequence of the defendant's wrong, because the necessity for such employment was imposed on the plaintiff by the defendant's fault, and because the plaintiff, an unprofessional person, did all he could do, or at least in the conditions obtaining what he had a right to do, when he employed a surgeon to treat and heal his injury, and the surgeon's mistake, if mistake there was, could

not be regarded as negligence on the part of the plaintiff, or as an intervening cause. True, there was evidence that the plaintiff requested his surgeon to "take the finger off"; but, on the testimony of the plaintiff and his surgeon, there was no doubt that his surgeon amputated the finger and a part of the hand because, in his judgment, there was no other way of relieving the pain which up to that time the plaintiff had constantly suffered. The surgeon may have blundered; but no reason appeared why the plaintiff should be held responsible. It was competent, of course, for the defendant to show that the plaintiff's physical condition had not been impaired to the extent claimed, but that was not the purpose or effect of the testimony in question.

Appearance and Acts as Evidence of Mental Condition

(Bell et al. v. Blackwell et al. (Texas), 273 S. W. R. 866)

The Court of Civil Appeals of Texas, in affirming a judgment admitting a will to probate, says that it thinks it is well settled that a person who knew the maker of a will intimately for a long time, with full opportunity to observe his appearance, action and conduct, may not only state those things which to the witness would indicate a change in the testator's mental condition for the worse, but, to show soundness of mind, may also state the converse; that is, that there had been no change in his mental condition during the acquaintance of the witness with him.

Insanity or unsoundness of mind, according to the authorities, may be shown by mere appearances and by proof of acts and conduct out of the ordinary, which, to a person of ordinary intelligence, would indicate an abnormal state of mind, insanity or unsoundness of mind. These matters may be easily shown by the appearance, acts and conduct of the person; but to prove that one is of sound mind, just the reverse is true. To prove that one is of sound mind, it is necessary to show only that he is not known to be guilty of any acts or conduct which would indicate to a man of ordinary intelligence that his mind is unsound. The absence of acts and conduct indicating that one's mind is abnormal, and the absence of appearances indicating that such person is in an abnormal state of mind, is [furnish] the only way in which such person can be shown to be of sound mind.

It may be very difficult, if practical at all, to give the reasons for knowing or believing that one with whom one has been closely associated for a long time is sane or insane, of sound mind or of unsound mind, just as it would be difficult to tell how a person's appearance indicates distress, mortification or joy, or to tell how the person of a friend is recognized. Still, people are found to be in the daily habit of acting in important matters on judgments so formed. Judgments so formed are grounds for an opinion or conclusion or judgment, which may be testified to in the courts.

It was not reversible error in this case for the trial court to instruct the jury that if the testatrix had the capacity to know and understand what she was doing, and the effect of her act at the time she executed the instrument offered for probate, her mind was sound; if she did not have it, her mind was unsound.

Damages Allowed for Miscarriage Caused by Fright

(Hanford v. Omaha & C. B. St. Ry. Co. (Neb.), 203 N. W. R. 643)

The Supreme Court of Nebraska, in affirming a judgment for $2,000 damages in favor of the plaintiff, holds that where a pregnant woman is placed in a position of reasonably apprehended peril by the negligence of one owing her a legal duty, and suffers a miscarriage as the proximate result of shock and fright produced by such negligence, she may recover damages from the wrongdoer. In this case, in which the plaintiff, standing within a few feet of the track on which two of the defendant's cars collided, was greatly frightened thereby and jumped back, immediately felt sick, and three days later suffered a miscarriage, she was entitled to recover damages whether her injuries resulted from the jump backward or solely from the fright. This court does not deem it a logical deduction that because there can be no recovery for mere fright, therefore there can be none for the consequences of fright. Because in the one case it is not possible to prove legal damage furnishes no reason for denying damages when they may be proved. The jury was properly instructed that it should not allow any damages for the death of the unborn child, or mental suffering, sorrow, or regret thereby occasioned the plaintiff.

Admissibility in Evidence of Hospital Record

(Kimber v. Kimber et al. (Ill.), 148 N. E. R. 293)

The Supreme Court of Illinois, in affirming a decree setting aside an alleged will on the grounds of want of testimentary capacity and undue influence, says that the trial court admitted in evidence a certain hospital record, which appellants insisted was incompetent, because some of the notations on it were made by interns and nurses, and not by the physician who testified concerning the record at the time it was offered. Such a record is admissible on the same basis as books of account, and before it can be admitted in evidence all persons who make entries in it are required to testify to their correctness. This court examined the hospital record as it appeared in the transcript of the record of this cause, and found that it contained memoranda relating to the physical condition, the findings from tests made, and a statement of the medical treatment given the patient. Some of the data set forth in the hospital record were included in the testimony of the physicians, and the rest related to matters that could not be prejudicial. The appellants had not shown wherein they were prejudiced by the admission of this record, and their contention with respect to it could not be sustained.

Society Proceedings

COMING MEETINGS

American College of Physicians, Detroit, Feb. 22-29. Dr. Frank Smithies, 920 N. Michigan Ave., Chicago, Secretary.

American Congress on Internal Medicine, Detroit-Ann Arbor, Feb. 22-29. Dr. Frank Smithies, 920 N. Michigan Ave., Chicago, Secretary.

WESTERN SURGICAL ASSOCIATION

Thirty-Fifth Annual Meeting, held at Wichita, Kan., Dec. 18-19, 1925

The President, DR. WILLARD D. HAINES, Cincinnati, in the Chair

Some Surgical Experiences with Thrombo-Angiitis Obliterans

DR. C. C. NESSELRODE, Kansas City, Kan.: The Leriche operation has been too promiscuously used and rests on a questionable foundation. To meet adequately the condition present in the group of presenile gangrene cases, one must recognize a diminishing group fitting the general description laid down by Raynaud, and an ever increasing group, the pathology of which has been made clear by Buerger and Rabinowitz. The vast majority of patients belonging to the latter group will ultimately face the question of amputation, but in the early stages one may practice palliative measures based on an effort either to increase the adequacy of the circulation to the part, or to change the chemical components of the blood. When one faces the issue of amputation, anything that will aid in the selection of a site for amputation is to be encouraged. In my experience the determination of the circulatory angle, as described by Buerger, and the visualization of the vascular tree, as described by Brooks, have been the two most valuable aids.

"Tenosuspension" for Habitual Dislocation of Shoulder

DR. MELVIN S. HENDERSON, Rochester, Minn.: Five years ago I reported nineteen cases of recurring or habitual dislocation of the shoulder joint in which operation had been performed. Since that time the operation has been performed in ten additional cases. In my experience, capsulorrhaphy and the various plastic muscle operations have not resulted in cure as often as the patients have a right to expect. I believe that the results of the operation of "tenosuspension" will

more nearly approach the percentage of cures that should be expected. There have been no recurrences in these thirty cases. Twenty-two months is the longest time since the operation.

Relation of Hyperthyroidism to Diabetes and Certain Other Pathologic States

DR. FREDERICK G. DYAS, Chicago: Diabetes and hyperthyroidism are on the increase. Hyperglycemia and glycosuria should be considered not alone from the standpoint of pathology of the pancreas but also in relation to the ductless glands. Since the medical treatment of hyperglycemia is diametrically opposed to that of hyperthyroidism, it is necessary to dispose of hyperthyroidism surgically before proper dietetic treatment for hyperglycemia can be instituted in most cases. The results thus far reported justify thyroidectomy in properly selected cases of hyperthyroidism and hyperglycemia and glycosuria.

Periduodenitis

DR. E. P. QUAIN, Bismarck, N. D.: Duodenojejunostomy for periduodenitis by transmesocolic methods has been done by me on nine patients. The outstanding symptoms in all these cases were headaches, epigastric pain after meals, nausea and emesis. Medical, postural and dietetic treatments were tried in all cases before operation was advised. Although the first operation was performed only fifteen months ago, the results to date have been highly satisfactory. The younger patients have been relieved of their symptoms through operation much more promptly and definitely than those near the age of 40. Sensations of nausea and fulness after meals were not entirely removed in some of the older patients. It seems that after the duodenum has practiced antiperistalsis for many years it becomes increasingly difficult to quit the habit, even if there be no apparent exciting cause present. The fluoroscope has shown in such cases that the sensation of nausea and epigastric distress corresponds to the time of the duodenal antiperistalsic waves, the same as it does before operation.

Gastric and Duodenal Ulcer, with Report of an Unusual Case

DR. A. E. BENJAMIN, Minneapolis: We still have much to learn about the cause of gastric and duodenal ulcer, and our method of treatment will, perhaps, be greatly modified when we have found the real reason for their development. With our present knowledge, we must encourage patients to have all possible foci of infection removed or treated. We must learn to recognize earlier the symptoms that lead to ulcer, and overcome them, if possible. Patients should be instructed to regard any unusual gastro-intestinal symptoms more carefully, and give the physician a chance to prevent a serious result. The internist and the surgeon should cooperate and observe more strictly their individual field of usefulness in the management of gastric or duodenal ulcer.

Carcinoma of the Stomach

DR. DONALD C. BALFOUR, Rochester, Minn.: Recent experiences with the preoperative preparation of patients with carcinoma of the stomach have convinced me that all patients for whom operation is contemplated should be observed in hospital before operation. This is especially important in cases of marked pyloric obstruction and gastric retention. For carcinoma of the stomach, the best types of resection are those in which restoration of gastro-intestinal continuity is by union between the stomach and the jejunum. For some time I have been performing either the Polya operation or the anterior anastomosis with entero-anastomosis. In my recent cases of partial gastrectomy for carcinoma I have found it advisable to perform anterior end-to-end anastomosis combined with entero-anastomosis in about 50 per cent. The safety of partial gastrectomy depends on the general principles of good mobilization, freedom from tension at the site of anastomosis, absolute hemostasis, independent ligation of blood vessels, evacuation of the stomach early in the operation so that the field contains a collapsed organ rather than a ballooned one, lavage of the whole operative field with physiologic sodium chloride solution, and the greatest possible protection of all suture lines by omentum. In the after-care, rest is the chief requisite. The mortality depends largely on the operability rate. The lesion is operable in about 25 per cent of the patients who come to the clinic with carcinoma of the stomach. Pneumonia and peritonitis are responsible for 75 per cent of the deaths that occur following operation for carcinoma of the stomach. It is difficult to keep the mortality rate under 10 per cent, but a mortality rate of 5 per cent would be possible if a careful selection of cases were made. This would result in denying some patients a chance for cure, and certainly in cases of carcinoma of the stomach the primary mortality rate should not govern the indications for operation. The percentage of patients cured depends on the character of the disease, the type of carcinoma and the extent of the lymph node involvement. When the nodes were not affected, the percentage of patients well and free of evidence of recurrence at the end of three years was 52.5. In the more unfavorable type, the percentage dropped to 18.

Results of Hypoglossofacial Anastomosis for Facial Paralysis

DR. ALFRED BROWN, Omaha: Judging by the results in two cases, it seems fair to assume that this operation will not only restore facial symmetry and voluntary motion to the facial muscles, but also bring about the return of a certain amount of emotional expression, the amount depending largely on the mental development of the patient.

Extrapleural Thoracoplasty

DR. ARTHUR A. LAW, Minneapolis: The operation of extrapleural thoracoplasty is a formidable major proceeding, particularly because it is performed on a patient already weakened and depleted by the ravages of his disease. In spite of its severity, the primary operative mortality is only 1.5 per cent, while the secondary mortality of 12 per cent within six weeks, from causes indirectly connected with the operation, is low in view of the type of patients presented. My own series of fifty-four operations performed on thirty different patients shows an immediate operative mortality of only one case, the single instance in which all the ribs were removed at one sitting; there was a futher loss of five patients in from seventeen days to five months after operation, from causes directly attributable to the operation or from the disease itself, all cases in which the first stage only of the operation had been done. Alexander, from his study of operative cases all over the world, found that the apparently cured and clinically cured cases averaged 38.8 per cent, and that the improved cases averaged 24.4 per cent, a total of 61.2 per cent cured or improved.

Wolffian Cysts in Men and Women Arising in Relation To the Testis and Ovary

DR. ROWLAND H. HARRIS, Battle Creek, Mich.: Of eleven cases of paratesticular cysts, four were multiple and seven single. They occurred within the cavity of the tunica vaginalis in two cases; on the right side in three cases; on the left side in six, and on both sides in two. Twice there was associated indirect inguinal hernia; four times there was accompanying hydrocele, and five times there was neither hernia nor hydrocele. There was no observable relationship between the cysts and any antecedent gonorrheal infection. There were seven operative cases of parovarian cyst. The cysts were all free from adhesions, and in only one case was there associated inflammation of the fallopian tube. In none of the cases did the cyst burrow deeply into the broad ligament. The cysts were on the right in four cases and on the left in three. They varied in size from 30 to 8,000 cc.

A Method of Preventing Skin Excoriation in Intestinal Fistulas

DRS. JOSEPH F. SMITH and H. H. CHRISTENSEN, Wausau, Wis.: Patients with small bowel fistulas can be made comfortable at once by the application of a kaolin-glycerin dressing to the skin, a sufficient quantity of sterilized powdered kaolin being mixed with glycerin to make a thin paste. This is applied to the body surface surrounding the wound. Over this we spread a generous quantity of powdered kaolin to absorb the escaping fluids. This, in turn, is covered with the usual dressings. Charcoal was used at times for the

powdered portion of the dressing, but because of its disagreeable color it is objectionable. These applications have been sufficient to keep the patient comfortable for from five to six hours. As the fistulas have contracted, two applications in twenty-four hours have been adequate. Patients with extensive skin excoriation may be controlled to the extent that the skin and other tissues about the fistula may be restored to a condition that will permit a surgical repair to be carried out.

Acute Appendicitis: A Study of Six Hundred Consecutive Cases

DR. H. K. WALLACE, St. Joseph, Mo.: From our study we cannot see that age makes any difference, except that in childhood the symptoms are a little less definite and the disease seems to progress more rapidly. The mortality rate was practically the same for children as for adults. Purgation is the outstanding cause for the high mortality in acute appendicitis. Operation should be performed as soon as possible after the diagnosis has been made. We can see no advantage in the Ochsner method of waiting for localization. The operation should be attempted only by a competent and well trained surgeon. In the perforated cases careful drainage should be done to prevent changing a localized peritonitis into a general one.

Effect of Jejunostomy on Experimental High Intestinal Obstruction

DRS. THOMAS G. ORR and RUSSELL L. HAYDEN, Kansas City, Kan.: Experimental jejunostomy in the dog has no beneficial effect. The evidence seems to indicate that life may be shortened by jejunostomy. The operation has no inhibiting effect on the changes in blood chemistry. Treatment of jejunal obstruction with sodium chloride tends to prolong the life of animals, regardless of jejunostomy. There is no information available to explain the difference in results between experimental and clinical jejunostomy.

Chronic Intestinal Obstruction

DR. CHARLES D. LOCKWOOD, Pasadena, Calif.: Cases of long-standing intestinal obstruction, with extensive immobilizing adhesions, are best treated by radical excision of all affected bowel up to 8 feet of small intestine. If the obstruction is complete at the time of operation and the patient toxic, no attempt should be made at radical resection but free intestinal drainage secured. An enterostomy above the site of anastomosis is essential, no matter how skilfully the operation may have been done.

Cause of Postoperative Rupture of Abdominal Incisions

DR. LEONARD FREEMAN, Denver: As an explanation for the postoperative rupture of abdominal wounds, the hypothesis is offered that it results from an inadequate closure of the peritoneum. The omentum forces itself between the loose stitches, and in swelling acts as an expanding wedge which forces the tissues apart and prevents proper union. This process is aided by serous exudation and precipitated by the strain of vomiting and distention. Massive adhesions and many postoperative hernias are similarly explained by subcutaneous wound rupture, which is much more common than complete wound rupture.

Elusive Ulcer of the Bladder

DR. HERMAN L. KRETSCHMER, Chicago: In a previous report, the percentage of cures in eleven cases treated by open operation was given as 75, and the recurrences 25. As time went on and the cases were kept under observation, the percentage of cures became smaller. It is apparent that the percentage of cures after so formidable an operation is relatively low and the percentage of recurrences very high. The percentage of cures in this group was 50, the recurrences 40 and improvement 10. In a group of twenty-four cases treated only by fulguration through the cystoscope, six patients are free from all types of urinary distress; sixteen are sufficiently improved to be satisfied with the results and cannot see the need for further observation or treatment. The intervention of an acute cold, grip or a gastro-intestinal upset may result in an immediate recurrence of some of the symptoms. One patient is under treatment and one has been lost sight of. At first sight, it appears that fulguration should be the treatment of choice, because the percentage of improvement in our series was large. When it is remembered that some of these patients have an aggravation of their symptoms consequent on such slight provocation as an intercurrent infection or fatigue, it would appear that the ultimate results of fulguration are not very gratifying. In several instances, patients improved by means of local treatment other than fulguration. The use of silver nitrate instillations into the bladder gave a good deal of relief, but in no instance was a patient cured.

A Comparison of Postoperative Convalescence After General and Local Anesthesia in Operations in the Upper Abdomen

DR. J. TATE MASON, Seattle: As a basis for this paper, 100 consecutive upper abdominal operations have been studied in a twelve months period. Fifty operations were performed under ether anesthesia, and fifty under local or local and gas anesthesia. All operations were performed by one surgeon, in the same hospital, with practically no change in the surgical staff or the floor nurses. An average of only eight minutes more was required for each operation under local anesthesia. The average stay in the hospital was three days less for the patients operated on under local anesthesia. Only eighteen of the local anesthetic patients vomited, while thirty-three of the ether anesthetic patients showed this symptom. In the latter the vomiting was more marked and more persistent. Nineteen of the patients receiving a local anesthetic, against thirty of the ether patients, suffered gas pains. Severe shock was experienced only once in this series and mild shock four times, each time after ether anesthesia. Bronchitis developed in eleven patients taking ether and in three after local anesthesia. One patient, aged 59, who had an acute gallbladder inflammation and bilateral pyelitis, developed pneumonia and died eight days after operation under local anesthesia. This was the only death of the series. There was no postoperative hernia or phlebitis.

Extrapleural Thoracoplasty in Pulmonary Tuberculosis

DR. CARL A. HEDBLOM, Madison, Wis.: Pulmonary collapse is of great value in the treatment of pulmonary tuberculosis because it promotes healing of the lesion, diminishes toxic absorption, and lessens the tendency of the disease to spread. Healing results from fibrous tissue encapsulation of the lesion. The relaxation of the lung makes possible the maximum fibrous tissue contraction, and by rest of the lung and venous and lymphatic stasis stimulates fibrous tissue formation. Toxic absorption is lessened, owing to the slowing of the lymph and blood stream and the collapse of cavitations. The spread of the disease through the blood and lymph stream is similarly retarded, and the lessened cough and sputum decrease the tendency to the dissemination of the infection through the bronchial tract. Extrapleural thoracoplasty is the only practical means of obtaining complete collapse of the lung in cases in which pleural adhesions make pneumothorax collapse impossible. The indications for this operation are limited to cases in which the condition of the other lung is satisfactory, that do not show satisfactory progress toward recovery following adequate sanatorium treatment or its equivalent, and in which satisfactory pneumothorax collapse is impossible because of adhesions. A definitely active, progressive tuberculous process, or well marked nontuberculous disease in the better lung contraindicates operation. An associated tuberculous empyema with large cavity, whether primary or secondary to pneumothorax collapse, is an indication for operation. Tuberculosis elsewhere in the body and other constitutional disease may or may not contraindicate operation, depending on the severity of the lesion and the general condition of the patient. A study of results following thoracoplasty in a large series of collected cases shows that over 60 per cent were clinically cured or greatly improved, and the total mortality during the first six weeks following operation was 13.5 per cent. By dividing the thoracoplasty into more than two stages, the indication for this operation may be extended to patients who would be poor risks for a one or two stage operation.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Psychiatry, Baltimore

5: 171-340 (Oct.) 1925

*Unusual Manifestation of Metastatic Miliary Carcinomatosis of Central Nervous System. N. D. C. Lewis, Washington, D. C.—p. 171.
*Suprarenal Cortex and Blood Cholesterol in Dementia Praecox. C. E. Gibbs, New York.—p. 189.
Inorganic Constituents of Blood of Catatonic Patients. J. M. Looney, Towson.—p. 213.
Mental Disease in United States in Relation to Environment, Sex and Age, 1922. H. M. Pollock, New York.—p. 219.
Social Psychiatry. C. P. McCord, Albany, N. Y.—p. 233.
State Administrative Problems in Care of Mental Defectives. S. Brown, New York.—p. 241.
Plea for Standardized and Intensive Treatment of Neurosyphilitic and Paretic. H. Goldsmith, Baltimore.—p. 251.

Metastatic Miliary Carcinomatosis of Central Nervous System.—In the case cited by Lewis, the total duration of illness was six weeks. The patient's health previous to this time had been excellent. The onset of the symptoms was abrupt. In the early stages before neurologic signs became pronounced, his case was considered, because of his peculiar behavior, one of catatonic dementia praecox. After definite but diffuse neurologic signs made their appearance, the diagnosis of epidemic encephalitis, of which there were several supportive facts through the history, was made by several neurologists. The man was comatose for six days before death. At the necropsy no evidence of gross tumors was found in any organ of the body. The brain was markedly congested, this congestion being universal and affecting the smallest capillaries, a few of which in the frontal regions had ruptured, thus producing small localized subpial hemorrhages. The brain structure was very boggy and edematous. The cervical cord was softened and so edematous that the gray substance was not well demarcated. The usual routine microscopic sections of the cortex disclosed a miliary carcinomatosis, and it was not until these had initiated a closer inspection of the brain with the hand glass that minute grayish red areas were visible. These areas, rarely larger than a small pinhead to the naked eye, were only slightly darker than the brain substance and were scattered everywhere in great numbers through the cortex, centrum semiovale and basal ganglions of both hemispheres. The midbrain structures, cerebellum, pons and medulla were also affected, but the cervical spinal cord, meninges and choroid plexus were free from visible lesions. No macroscopic or microscopic tumor was discovered in any other organ or tissue of the body to account for the original source of these metastases.

Blood Cholesterol in Dementia Praecox.—The results noted by Gibbs in his case seem to show that in many patients with dementia praecox the blood cholesterol is unusually low, and that it may be more directly correlated with the psychosis and with sex than with any other recognized factors.

Annals of Clinical Medicine, Baltimore

4: 365-448 (Nov.) 1925

*Recurring Peptic Ulcer. A. B. Rivers and G. B. Eusterman, Rochester, Minn.—p. 365.
Penetrating Ulcer of Stomach: Four Cases. M. Einhorn, New York. —p. 379.
*Fractional and Single Specimen Gastric Tests: Their Relative Advantages. R. S. Hubbard and J. A. Lichty, Clifton Springs, N. Y.—p. 393.
*Carcinoma in Duodenal Diverticulum: Duodenal Diverticulosis. T. H. Morrison and M. Feldman, Baltimore.—p. 403.
*Rosenthal Phenoltetrachlorphthalein Test as Means of Determining Liver Function. J. Friedenwald and Z. Morgan, Baltimore.—p. 415.
*Relationship Between Disease of Gallbladder and Infection in Gastro Intestinal Tract. H. W. Soper, St. Louis.—p. 422.
Chronic Ulcerative Colitis. T. R. Brown, Baltimore.—p. 425.
Surgical Treatment of Chronic Ulcerative Colitis by Ileosigmoidostomy. W. F. Rienhoff, Jr., Baltimore. —p. 430.

Recurring Peptic Ulcer.—One hundred and fifty cases in which there was surgically verified evidence of one or more secondary benign or reactivated lesions in the stomach or duodenum were studied by Rivers and Eusterman. Recent statistics show that of a total of 6,402 patients of all types and ages operated on for chronic ulcer of the stomach and duodenum, only 228 required a secondary operation. This represents a failure of surgery to cure only about 3.5 per cent of these patients. Balfour has reported that secondary operations were necessary in only thirty-five of 1,000 cases in which gastro-enterostomy was performed. Peptic ulcer rarely recurs after adequate surgical treatment and postoperative precaution. Complaints pertaining to the recurring lesions are usually very similar to those caused by the original one. Hemorrhage is a frequent symptom in the recurring ulcer group. If the original ulcer was in the stomach, the recurring ulcer is almost invariably again gastric in location. There are certain types of persons who seem especially predisposed to recurrent ulcer. They include, in particular, those who are constitutionally inferior, with nervous imbalance, nervous hyperirritability, and particularly those who are indiscreet in dietetic and personal habits. This implies reference to the abuse of tobacco. Recurring ulcer, in all likelihood, is not caused by any one factor. It is probably the result of a combination of causes, among which infections, mechanical factors and chemical factors combine to establish a new lesion.

Study of Gastric Juice.—Hubbard and Lichty assert that the method of studying the gastric juice should vary with the information sought. For convenience in comparing one result with another, the removal of a single specimen is convenient. The fact that results obtained by this method are less likely to error from emotional disturbances than are those obtained in other ways enhances its value. When it is used, results which show an achylia should be regarded with suspicion. When it is desirable to know the changes in acidity that take place throughout the gastric cycle, it is best to determine the average acidity of the stomach at different times. If the maximum acidity in any part of the stomach is the thing sought, an investigation by the method of Gorham, carried out at the time when the average acidity is highest, is the method of choice. In many instances more than one study should be obtained before a decision on a case can be made. It seems to the authors that a fractional and a single specimen test, rather than a number of duplicate determinations by the same method, should be used as checks on one another, for the errors that affect one determination are different from those which influence values by another. The highest value found is the one that should be used in diagnosis, for almost all the causes of errors are such as decrease the acidity of the gastric juice. The method used in carrying out the analysis must decide whether the acid value obtained probably represents the average acidity of the stomach contents, or the percentage of hydrochloric acid present in a part of the organ.

Carcinoma in Duodenal Diverticulum.—In a series of twelve cases of duodenal diverticulum, one instance of carcinoma was discovered, the latter being the only case on record of a primary carcinoma occurring in a duodenal diverticulum.

Rosenthal Liver Function Test.—Friedenwald and Morgan regard the Rosenthal method a valuable means of determining liver function, for when injected intravenously the dye disappears rapidly under normal conditions at a uniform rate; while, on the other hand, a greater or less retention is noted corresponding to the degree of liver disturbance. In catarrhal jaundice marked retention occurs, a condition that persists for a considerable period following the disappearance of the icterus, which strongly suggests some distinct disturbance of the liver cells. In cirrhosis of the liver, retention of the dye may occur to a greater or less degree. In all instances of cancer of the liver, retention occurs to a rather marked degree. In syphilis of the liver, retention of the dye may or may not occur, depending largely on the degree of involvement. In cancer of the pancreas with secondary liver involvement, marked retention is ordinarily noted. In chronic cholecystitis, cholelithiasis and affections in which the liver

itself is not severely involved, retention is never observed. Finally, it is evident that this test is of considerable value as a means of determining liver function; it should be performed as a routine whenever there is evidence of liver involvement, since it offers much diagnostic aid.

Gallbladder Disease and Gastro-Intestinal Tract Infections.—In Soper's series there were 411 cases of proved gallbladder disease. Of these, 121 cases could be credited to infections occurring in the puerperal state; 120 cases were of obscure or unknown origin. The remaining 170 cases disclosed a definite relationship between the gallbladder infection and infections in the gastro-intestinal tract: typhoid, 38 cases; dysentery, 17 cases; anacid gastritis, 26 cases; purulent proctosigmoiditis, 30 cases; colitis, 47 cases, and colonic diverticulitis, 12 cases.

Archives of Dermatology and Syphilology, Chicago

12: 773-920 (Dec.) 1925

*Microchemical Studies of Arsenic in Arsenical Pigmentation and Keratoses. E. D. Osborne, Buffalo.—p. 773.
Thrush Infections of Skin. B. Shelmire, Dallas, Texas.—p. 789.
*Mycosis Fungoides: Relation to Leukemia and Lymphosarcoma. J. F. Fraser, New York.—p. 814.
*Spinal Cord in Pemphigus. I. L. McGlasson and W. Keiller, Galveston, Texas.—p. 829.
Fusiform Bacilli and Spirochetes. XII. Occurrence in Gangrenous Lesions of Fingers. I. Pilot and K. A. Meyer, Chicago.—p. 837.
Hypercholesterolemia. II. Experimental Induction. F. W. Sunderman and F. D. Weidman, Philadelphia.—p. 840.
*Lacquer Dermatitis Treated with Rhus Toxicodendron Antigen. C. M. Williams, New York.—p. 851.
*Fungus Infections of Skin. J. F. Burgess, Montreal.—p. 853.
*Value of Nonspecific Protein Therapy in Syphilis: Effect on Wassermann Reaction When Used as Adjunct to Neo-Arsphenamine. S. S. Greenbaum and C. S. Wright, Philadelphia.—p. 858.

Microchemical Study of Arsenic in Tissue.—There exists a satisfactory method for the microchemical study of arsenic in tissue, which has been employed by Osborne in the study of arsenical keratoses and pigmentation. A detailed description of the method, with controls, is given; likewise a study of arsenical keratoses, with photomicrographs showing the location of the arsenic deposits. The mechanism of the production of arsenical keratoses and its bearing on the development of epitheliomas is discussed. The probable action of arsenic in the production of pigment is described.

Mycosis Fungoides; Leukemia; Lymphosarcoma.—Two cases of mycosis fungoides are reported by Fraser in which the pathologic changes in the tissues were unquestionably neoplastic. Evidence is presented which shows a genetic relation between mycosis fungoides, lymphatic leukemia and lymphosarcoma. The name reticulum cell sarcoma is suggested to replace the term lymphosarcoma in designating the lesion of mycosis fungoides. The suggestion is based on the assumption that the lesion has its origin in the reticulum cells of the papillary layer (reticulo-endothelial system of the skin).

Spinal Cord in Pemphigus.—The case reported by McGlasson and Keiller appears to indicate that a great number of corpora amylacea is the most characteristic finding in the brain stem and cord in patients dying of pemphigus. In a second case, however, seen after the records on the first case were ready for publication, there were no corpora amylacea and degeneration of the nerve cells, and occasional microscopic hemorrhages were the only pathologic lesions common to the two cords. Besides the neurologic findings, the chief difference between the two cases was that the case reported occurred in an exceedingly fat woman, while in the case to be reported later the patient was extremely emaciated. Possibly, the extreme emaciation and presumably carbohydrate hunger might account for the absence of corpora amylacea.

Lacquer Dermatitis.—Williams asserts that his case is unique; there is no other report of the treatment of lacquer dermatitis with *Rhus toxicodendron* antigen. It is evidence in support of the belief that the poisonous principle in *Rhus vernicifera* is the same as that in *Rhus toxicodendron*, and strong evidence that *Rhus toxicodendron* antigen may be useful in any form of rhus poisoning.

Fungus Infections of Skin.—Burgess has investigated 140 cases of ringworm. Of these, 130 showed the presence of a ringworm fungus by microscopic examination, and ten cases were negative. In sixteen cases, in which the microscopic examination was positive, it was impossible to isolate the fungus. Of the ninety-nine identified cultures, sixty-two were obtained from cases of ringworm of the scalp, thirty-four from lesions of the glabrous skin, and three from cases of ringworm of the beard. Of sixty-two cases of scalp ringworm, 60 per cent were due to *Microsporon* infections, 50 per cent of which were about equally divided between *Microsporon audouinii* and *M. lanosum;* 25 per cent were due to *Trichophyton* infections, and about 15 per cent to *Achorion schönleinii.* Of thirty-four cases of epidermophytosis, 12 per cent were of *Microsporon* origin, 60 per cent due to *Trichophyton* varieties, and 22 per cent to *Saccharomyces.* Three cases of tinea barbae were all due to members of the *Trichophyton* family. Two cases of epidermophytosis are reported, in each of which lesions of dyshidrosis developed following a primary mycotic infection. In one of these cases, lesions of *Lichen trichophyticus* were also present.

Nonspecific Protein Therapy in Syphilis.—Greenbaum and Wright show that nonspecific protein therapy alone will result in partial or complete involution of secondary and tertiary lesions. When used as an adjunct to neo-arsphenamine in the treatment of patients with latent syphilis with strongly positive Wassermann reactions, the influence in reducing a positive reaction to a negative one is more marked than when neo-arsphenamine alone is used. The explanation of this is not clear, but it is suggested that the protein therapy serves to stimulate normal protective mechanisms within the body. If this is true, nonspecific protein therapy should prove a valuable adjunct to the usual antisyphilitic remedies.

Canadian Medical Association Journal, Montreal

15: 989-1092 (Oct.) 1925

Cancer of Colon. H. W. Carson, London.—p. 990.
*Injection of Lipiodol as Aid in Roentgen-Ray Diagnosis of Bronchopulmonary Lesions, Including Tuberculosis. D. H. Ballon, Montreal.—p. 995.
*Roentgen-Ray Demonstration of Pulmonary Changes in Tuberculosis by Lipiodol Injection. E. Archibald, Montreal.—p. 1000.
*Cultural Study of Ringworm Fungi. J. F. Burgess, Montreal.—p. 1003.
*Familial Icterus Gravis of New-Born. A. P. Hart, Toronto, Ont.—p. 1008.
*Amebic Dysentery in Canada. J. E. Bates, Toronto.—p. 1012.
*Studies on Incidence of Goiter Among School Children in Manitoba. T. G. Hamilton and D. F. McRae, Winnipeg.—p. 1017.
*Basal Metabolic Determinations in 250 Winnipeg School Children. A. T. Cameron, Winnipeg.—p. 1022.
Goiter Problem. F. H. Lahey, Boston.—p. 1026.
Use and Abuse of Obstetric Forceps. W. P. Tew, London, Ont.—p. 1031.
Urinary Retention. G. S. Foulds, Toronto.—p. 1034.
Bladder Neck Obstructions—How Can Operative Mortality Be Lowered and End-Results Improved? D. N. Eisendrath, Chicago.—p. 1037.
Gastric and Duodenal Ulcer. F. B. Mowbray, Hamilton.—p. 1042.
Cancer of Lower Lip. W. H. McGuffin, Calgary.—p. 1046.
Necessity of Effective Organization in Public Health Departments. J. W. S. McCullough, Toronto.—p. 1050.
Familial Tendency in Angina Pectoris: Case. E. S. Mills, Montreal.—p. 1052.
Larvae of Fly in Tympanum: Case. M. L. Jewett, Millville, N. B.—p. 1053.

Use of Lipiodol in Diagnosis of Lung Lesions.—Ballon is of the opinion that the injection of lipiodol in pulmonary lesions will probably assist the surgeon materially in the selection of suitable cases for operation in pulmonary tuberculosis, and indicate clearly the successful or nonsuccessful result of his treatment and whether there is a necessity of further operative intervention. It will also assist in elucidating the cause of a persistence of certain symptoms in cases of pulmonary tuberculosis following thoracoplasty. It will demonstrate associated conditions such as bronchiectasis and pulmonary tuberculosis, and will aid in the diagnosis of subdiaphragmatic abscess, interlobar empyema communicating with a bronchus, new growth, and similar conditions. This study includes illustrations of lipiodol injections of the normal lung, the bronchial tree, bronchiectasis, lung abscess and pulmonary tuberculosis after thoracoplasty.

Use of Lipiodol in Chest Roentgenography.—The demonstration of residual lesions after thoracoplasty, the localization of which is made accurately by stereoscopic and lateral plates, Archibald says, is hardly possible by any other method

than by injection of lipiodol. It determines whether further operation is justifiable or not. If a further operation is attempted, the method will allow of some reasonable control of the results obtained. In addition it ought to be possible, in cases that come up for an opinion as to the advisability of thoracoplasty, when the ordinary roentgenograms give no detailed information about the condition of the lung, owing to dense shadows, to demonstrate with lipiodol the presence or absence of cavitation and bronchiectasis. Archibald looks forward also to its use in differentiating between localized pneumothorax and intrapulmonary cavity, a distinction which is frequently difficult to make. The problem of annular shadows may, in some measure, be resolved by this method.

Culture of Ringworm Fungus.—For the cultivation of these fungi, Burgess uses a 6 per cent glycerin agar. Some varieties show a growth visible to the naked eye in from four to twenty days. Some rarer types, such as *Trichophyton faviforme*, do not appear in culture for two months or even longer. There is a striking difference between the fungi as they appear in the lesion and when they are grown on cultural mediums. The growth on cultural medium is much more luxuriant than it is in the lesion itself, and they differ greatly in their morphologic characters. Besides their clinical value, cultural studies of ringworm infection assist in forming a clear conception of the lesions they produce.

Familial Icterus Gravis of New-Born.—The family history in the case cited by Hart was a remarkable one. They had had six boys born previously, all apparently as healthy and strong at birth as this baby. All, however, had developed jaundice within the first twenty-four hours, and the condition had become progressively worse until death occurred in from three to eleven days. They had only one child living, a girl who was the second child born to the family. She had become jaundiced as the others but she had managed to live, although deeply jaundiced, until 1 year old and weighing at this age only what she had weighed at birth. After a year the jaundice gradually disappeared and she grew very rapidly so that she is now at 12 years a very big girl for her age but suffering with chorea. There was absolutely no history of jaundice in the family on either the paternal or the maternal side, and both parents were perfectly healthy. There was no history of syphilis. There had been no miscarriages. The baby was a well developed male child, 2 hours old, and perfectly healthy and at this time with no sign of jaundice. On the second day, jaundice began to appear on the tip of the nose. On the next day, the baby being then 48 hours old, he was distinctly jaundiced. The liver was not enlarged and the jaundice was no more intense than ordinary icterus neonatorum. On the third day, the jaundice had become much more intense, so that the skin was a deep orange. It was clearly a case of familial icterus gravis. It was decided to do an exsanguination transfusion. Three hundred cubic centimeters of blood was drawn from the anterior fontanel, 335 cc. of blood being transfused at the same time into the internal saphenous vein at the left ankle. The transfusion of blood was begun after 20 cc. of blood had been removed, and the transfusion and exsanguination went on synchronously until the required quantity had been used, and was ended by giving the baby 35 cc. more than had been removed. In addition, 60 cc. of 5 per cent glucose solution were given. The donor was a healthy male not belonging to the family. By the following morning the jaundice was much less intense. It continued to fade, so that by the fourth day it had entirely disappeared and the baby seemed much better. When 3 weeks old, there was a slight return of jaundice. Preceding this he had been constipated. This slight return of jaundice had entirely disappeared four days after it was first noted and when the constipation had been corrected. He has had no return of the jaundice and is developing as any normal baby.

Amebic Dysentery in Canada.—Bates cites what appears to be the third case of amebic dysentery originating in Canada. It is his opinion that such cases are not as rare as usually stated, and that with careful examination of the stools of persons suffering from mucous colitis the amebas would be encountered in as high a proportion of cases as in England or the United States.

Incidence of Goiter Among Manitoba School Children.—The studies made by Hamilton and McRae are based on the findings in a survey of 2,329 children in the city of Winnipeg and several country points in Manitoba. It is shown that there is a high incidence of goiter among these children, and there is an apparent difference in the susceptibility of the various races. This shows both in the total goitrous incidence and in the degree of severity. These findings are taken to indicate the possible importance of causative factors other than the water supply.

Basal Metabolism of Winnipeg School Children.—Linear curves that are definitely higher than those based on Benedict and Talbot's predicted figures have been determined by Cameron for basal oxygen consumption by normal preadolescent children, measured in Winnipeg by a closed circuit clinical apparatus. Of 163 goitrous children whose oxygen consumption has been measured under basal conditions and referred to these curves, probably not more than 2.5 per cent are definitely above maximum normal limits (and therefore possibly hyperthyroid), and none are definitely below normal limits.

Iowa State Medical Society Journal, Des Moines

15: 629-680 (Dec. 10) 1925

Relationship of Tuberculosis to Certain Fundus Changes: Periphlebitic Retinitis. T. B. Holloway, Philadelphia.—p. 629.
Perforations of Frontal Sinus Wall in Chronic Empyema. L. G. Howard, Council Bluffs.—p. 637.
Management of Cystitis. W. R. Hornaday, Des Moines.—p. 639.
End-Results in Submucous Resection. C. E. Chenoweth, Mason City. —p. 643.
Gallbladder Disease. J. Phillips, Cleveland.—p. 649.
Treatment of Goiter. N. J. Maclean, Milwaukee.—p. 653.
Hospitalization of War Veterans Today. I. M. Pugh.—p. 657.

Journal of Clinical Investigation, Baltimore

2: 117-212 (Dec. 20) 1925

*Effect of Anoxemia on Heart. II. Intraventricular Conduction. W. H. Resnik, Baltimore.—p. 117.
*Id. III. Changes in Auricles: Relationship Between Anoxemia and Auricular Fibrillation. W. H. Resnik, Baltimore.—p. 125.
*Simultaneous Respiratory Exchange and Blood Sugar Time Curves in Diabetic and Nondiabetic Individuals Following Ingestion of Glucose. I. M. Rabinowitch, Montreal.—p. 143.
Effect of Caffein Sodio-Benzoate, Theobromin Sodio-Salicylate, Theophyllin and Euphyllin on Coronary Flow and Cardiac Action of Rabbit. F. M. Smith, G. H. Miller and V. C. Graber, Iowa City.—p. 157.
Total Acid-Base Equilibrium of Plasma in Health and Disease. VI. Studies of Diabetes. J. P. Peters, H. A. Bulger, A. J. Eisenman and C. Lee, New Haven, Conn.—p. 167.

Effect of Anoxemia on Heart.—Resnik says that, in the normal heart, anoxemia produces comparatively slight changes in intraventricular conduction. These changes are similar in character, though much less marked than those which occur in auriculoventricular conduction: at first, the Q-R-S interval shortens; later, it lengthens. It is probable that ventricular aberration in clinical cases is an indication of more or less serious disturbance of the function of the Purkinje tissues. Ventricular fibrillation is prone to develop during anoxemia.

Effect of Anoxemia on Auricles.—Resnik found that the sino-auricular node is highly sensitive to anoxemia. There is at first a brief period during which the rate of impulse formation is accelerated, followed rapidly by progressive slowing of the intrinsic rate of the heart. Anoxemia first reduces, then increases the absolute refractory period of the auricles. Anoxemia diminishes the rate at which a circus movement travels throughout the auricle. When vagal tone is removed, and the auricles are stimulated by a faradic current, the early effect of anoxemia is to predispose the auricles to fibrillation; the late effect is to inhibit the development of fibrillation. The mechanism by which anoxemia produces these effects is discussed.

Respiratory Exchange and Blood Sugar Time Curves.—Simultaneous respiratory exchange and blood sugar curves were obtained by Rabinowitch in eleven cases of diabetes mellitus, five of renal glycosuria and two of pituitary disease with glycosuria. This method demonstrated the possible fallacy of the interpretation of blood sugar curves. Hyperglycemia results only when the combined rates of oxidation and storage do not keep pace with the rate of absorption. In a mildly diabetic patient in a state of starvation, the

storage mechanism may be unimpaired, or at least not impaired enough to be demonstrated by methods now in use. These findings are suggestive of the possible existence of two different forms of diabetes. In one form of the disease, the predominant defect is storage of carbohydrates; in the other, defective oxidation. Based on the classification of diabetes employed here, the former type of disturbance—defective storage—would appear to be predominant in the more severe form of the disease.

Journal of Infectious Diseases, Chicago

37: 481-562 (Dec.) 1925

*Studies on Respiratory Diseases. XXI. Electrophoretic Potential and Virulence of Pneumococci. I. S. Falk, H. A. Gussin and M. A. Jacobson, Chicago.—p. 481.
*Id. XXII. Relation Between Fatality in Lobar Pneumonia and Electrophoretic Potential on Pneumococci. I. S. Falk, M. A. Jacobson, and H. A. Gussin, Chicago.—p. 495.
Id. XXIII. Electrophoretic Potential and Virulence of Variants of Type I Pneumococci. I. S. Falk, M. A. Jacobson and H. A. Gussin, Chicago.—p. 499.
Id. XXIV. Electrophoretic Potential, Virulence and Serum Agglutination with Single Cell Cultures of Variants of Type I Pneumococci. I. S. Falk and M. A. Jacobson, Chicago.—p. 507.
Effect of Hydrogen Ion Concentration on Certain Antigenic Properties of Clostridium Botulinum. I. S. Falk and F. Powdermaker, Chicago.—p. 514.
Detoxication of Bacterial Vaccines by Formaldehyde. W. H. Wherry and J. A. Bowen, Cincinnati.—p. 520.
*Separation of Soluble Specific Substance from Hemolytic Streptococci. E. F. Hirsch, Chicago.—p. 523.
Intra-Uterine Injection of Acid-Fast Bacilli in Guinea-Pig. Y. C. Sun, O. Ishii and L. Loeb, St. Louis.—p. 528.
Nature of Toxic Substances Produced by B. Suipestifer. E. E. Ecker and M. L. Richardson, Cleveland.—p. 538.
Production of Toxic Substances in Young Cultures of Single Cell Strains of B. Paratyphosus B. E. E. Ecker and E. Megrail, Cleveland.—p. 526.
Antibody Response to Large and Small Doses of Multiple and Single Antigens, and Restimulation of Specific Antibody Formation by Heterologous Antigens. M. Corrigan, Chicago.—p. 549.
*Atypical Weil-Felix Reaction. R. Gilbert and M. Coleman, Albany, N. Y.—p. 559.

Electrophoretic Potential of Pneumococci.—From measurements on seventy-six strains of pneumococci isolated from cases of lobar pneumonia (nineteen type 1, twenty-four type 2, seven type 3 and twenty-six type 4) done by Falk, Gussin and Jacobson, it appears that the electrophoretic potentials are different for the several types. The sequence of decreasing electrophoretic potential is identical with the sequence for decreasing virulence.

Relation Between Fatality in Pneumonia and Electrophoretic Potential of Pneumococci.—The sequence of decreasing virulence of pneumococci for white mice is 3, 1, 2, 4, and this is the sequence also for decreasing electrophoretic potential. As this is also the probable sequence of decreasing fatality rate in lobar pneumonia in man, it was anticipated by Falk, Jacobson and Gussin that strains of pneumococci isolated from fatal cases of pneumonia might show larger potentials than strains of the same type isolated from nonfatal cases. The experimental findings reported here confirm this anticipation for pneumococci of types 2, 3 and 4 and contradict it for strains of type 1.

Specific Substance Extracted from Hemolytic Streptococci.—A soluble specific substance has been extracted from hemolytic streptococci by Hirsch. The chemical reactions of this substance resemble those of similar substances prepared from many bacteria by other investigators. Solutions of this substance give precipitin reactions in high dilution with antistreptococcus serums, and with the serum of rabbits injected with the substance.

Atypical Weil-Felix Reaction.—A case is described by Gilbert and Coleman in which no definite diagnosis was made, grip, typhoid, Brill's disease, tick-bite fever and Rocky Mountain spotted fever being, in turn, considered and rejected. Both before and after inactivation by heating at 62 C., the patient's serum from cases known to be typhus fever lost the agglutinins for *B. proteus* X 19 at a point between 54 and 56 C. In immune rabbit serum the agglutinins were not destroyed until between 70 and 75 C. was reached. These results indicate the desirability of determining the relative thermolability of the agglutinins in serum from suspected cases of typhus fever.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

37: 449-502 (Nov.) 1925

*Relationship of Syphilis to Other Diseases of Skin. R. W. Mackenna.—p. 449.
Relationship of Syphilis to Other Dermatoses. E. F. Skinner.—p. 459.
Poikiloderma Atrophicans Vasculare. C. Rasch.—p. 477.

Relationship of Syphilis to Other Skin Diseases.—Mackenna is convinced that a syphilis infection, acquired or hereditary, does not render the sufferer more liable to other diseases of the skin, but a syphilitic infection acquired by a person suffering from a skin disease may modify the preexisting skin affection. This modification may affect the character of the lesions, may superimpose on the skin lesions definite lesions of the major affection, or may render these skin lesions more chronic and less amenable to treatment.

British Journal of Ophthalmology, London

9: 609-656 (Dec.) 1925

Endothelioma of Optic Nerve. H. Neame and E. Wolff.—p. 609.
Glaucoma Secondary to Choroidal Sarcoma. Treatment of Painful Blind Glaucomatous Eyes. H. Neame and W. A. Kahn.—p. 618.
Colors of After-Images, Following Strong Light Stimuli. H. Weve.—p. 627.

British Medical Journal, London

2: 1099-1160 (Dec. 12) 1925

Diagnosis and Treatment of Splenic Enlargement in Children. H. Rolleston.—p. 1099.
Strength of Insulin Preparations: Comparison Between Laboratory and Clinical Measurements. Biologic Assay. H. P. Marks.—p. 1102.
Id. Clinical Assays. G. A. Harrison and R. D. Lawrence.—p. 1104.
Right and Left-Handedness in Primitive Men. G. E. Smith.—p. 1107.
Operative Treatment of Chronic Middle Ear Suppuration. G. J. Jenkins.—p. 1109.
Id. S. R. Scott.—p. 1112.
Id. J. B. Horgan.—p. 1113.
Chronic Nonsuppurative Middle Ear Deafness. W. Milligan.—p. 1115.
Id. J. K. Love.—p. 1117.
Id. N. Maclay.—p. 1118.
Id. H. N. Barnett.—p. 1119.
Ascaris in Bile Ducts. W. F. Brayne.—p. 1122.
*Congenital Malformation of Spine. E. F. W. Buckell.—p. 1123.
Rectal Anesthesia. R. D. Laurie.—p. 1123.
*Serous Suture Material and Peptic Ulcer. J. O'Conor.—p. 1123.

Congenital Malformation of Spine.—Buckell reports the case of a woman who fell downstairs in her fifth month of pregnancy. She was quite well in a day or two. When the child was born, after a normal labor, it was noted that at about the middle of the back was a wound on the right side of the spinous processes. No bone could be felt in this wound. Below the wound was a raised lump, which was hard and felt like fused bone. There was also a complete cleft palate but no harelip. The left parietal bone was about half as well developed as the right, and the right side of the frontal bone was half as well developed as the left. All the sutures were very wide. There was a hematoma over the left parietal bone. There was practically no neck; it appeared to have been telescoped into the chest, which in front showed no marked abnormality. The baby lived fourteen days. During life, it never closed its eyes by night or day.

Serous Suture Material and Peptic Ulcer.—O'Conor calls attention to the fact that while absorbable catgut is essential for approximation of divided mucous membrane, its employment for any serous closure is fraught with danger of dehiscence. The employment of Lembert silk stays to guide the introduction of continuous Lembert silk suture is the only certain method, in O'Conor's opinion, of avoiding a mucous lesion.

Bulletin Naval Medical Association of Japan, Tokyo

3-8 (Oct.) 1925

Filtrability of Spirochaeta Icterohemorrhagiae. T. Kabeshima.—p. 3.
Superiority Between Phenol and Compound Solution of Cresol as Disinfectant for Excreta. C. Suzuki.—p. 5.
Multiple Papilloma of Bladder. S. Kudo.—p. 8.
Typhoid Abscess of Abdominal Rectus. T. Mizuno.—p. 27.

Calcutta Medical Journal

20: 49-94 (Sept.) 1925

Operative Treatment of Chronic Frontal Sinus Suppuration. J. K. Datta.—p. 49.
Nature of Disease and Therapeutics. P. K. Bardhan.—p. 60.
*Case of Rupture of Trachea. P. Chatterjee.—p. 66.
Total Ophthalmoplegia of Left Eye. S. K. Mukherjee.—p. 67.
Unusual Delay in Regaining Lost Accommodation After Application of Cycloplegic. B. N. Bhaduri.—p. 69.

Rupture of Trachea.—Chatterjee relates a case of subcutaneous rupture of the trachea the result of a fall. The patient, aged 10, fell from a chair, his neck striking the back of the chair. Extensive emphysema and dyspnea immediately developed and were followed by cyanosis. Operation was done within an hour after the injury. A small rupture was detected at the posterolateral aspect of the trachea on the left side, at its junction with the cricoid cartilage. A plug of gauze was introduced into the wound up to the site of the rupture. Dyspnea was relieved by opening the trachea and putting in a tracheotomy tube. In this case, the rapidity and extent of spread of extravasated air was disproportionate to the extent of the tracheal lesion.

Indian Medical Gazette, Calcutta

60: 507-558 (Nov.) 1925

Chronic Osteomyelitis in Long Bones: Cases. H. Hallilay.—p. 507.
Artificial Feeding of Infants. E. H. V. Hodge.—p. 509.
Extra-Uterine Gestation Going to Term with Living Mother and Child. P. S. Mills.—p. 510.
Suprapubic Prostatectomy at One Sitting. M. D. David.—p. 511.
Value of Iodine Intravenously in Treatment of Influenza. C. P. V. Shunker.—p. 513.
Mosquito Factor in Malaria of Assam Tea Gardens. C. Strickland.—p. 514.
Treatment of Malaria with Peracrina. W. Fletcher.—p. 524.
Stone in Bladder Formed Around Foreign Body. J. L. Lunham.—p. 527.
Amputation of Penis. S. C. Das Gupta.—p. 528.
Fatal Case of Liver Abscess. J. P. Arland.—p. 531.
Case of Accidental Abdominal Injury. K. V. Joglekar.—p. 532.
Case of Hydatid Cyst of Right Parotid and Submaxillary Glands. N. P. Shrivastava.—p. 532.

Indian Medical Record, Calcutta

45: 337-368 (Nov.) 1925

Therapeutic Aspect of Asthma. S. Banerjee.—p. 337.
German Congress of Roentgenology. K. M. Hiranandani.—p. 339.
Ulcerating Granuloma of Pudenda. R. Saheb and S. C. Dutt.—p. 340.
Immunity. A. Ray.—p. 341.

Irish Journal of Medical Science, Dublin

555-602 (Dec.) 1925

Perthes' Disease. H. F. MacAuley.—p. 560.
*Teratoblastoma of Mesentery: Tumor. D. J. Cannon and W. D. O'Kelly.—p. 571.

Teratoblastoma of Mesentery.—The patient in this case was 3 years of age. There were no symptoms other than enlargement of the abdomen. The preoperative diagnosis was embryonal kidney tumor. It proved to be a tumor of the mesentery—a teratoblastoma—measuring 6 inches (15 cm.) in diameter. The patient recovered.

Kenya Medical Journal, Nairobi, East Africa

2: 215-244 (Nov.) 1925

Venereal Disease Measures in Uganda. G. J. Keane.—p. 216.
Natural Enemies of Rats: Their Possibilities in Plague Prevention. G. H. Goldfinch.—p. 225.
Pellagra in Nyasaland. H. M. Shelley.—p. 235.

Lancet, London

2: 1209-1264 (Dec. 12) 1925

Lymphadenoma (Hodgkin's Lymphogranuloma). H. Rolleston.—p. 1209.
Case for Unborn Child. T. W. Eden.—p. 1218.
*Behavior of Diabetic Toward Circulating Glucose. H. S. Pemberton and L. Cunningham.—p. 1222.
*Calcification of Pleura: Case. F. H. Young.—p. 1224.
*Cultivation of Spirillum of Rat-Bite Fever. T. Joekes.—p. 1225.
*Case of Psoriasis: Isolation of Monilia From Skin Scales, Mouth and Sputum. G. G. Sanders.—p. 1226.

Behavior of Diabetic Patient Toward Glucose.—The results recorded by Pemberton and Cunningham make it clear that the diabetic differs from the nondiabetic patient in his behavior toward circulating glucose. These differences are: 1. Fasting and without insulin, the arterial value differs quite widely from the venous. 2. With glucose and ether and without insulin, there is a greater increase in both arterial and venous values, and in the fasting state the venous value may rise higher than the arterial. 3. With insulin, either fasting or with food, the relationships between arterial and venous values tend to approach those of the nondiabetic patient. The tissue at fault appears to be muscle. In order to explain these observations, it must be assumed that diabetic muscle tissue cannot take up glucose; all these abnormalities are removed in some measure by insulin. The behavior of the diabetic patient and the characteristic alteration obtained with insulin turn on the factor of glycogen formation.

Calcification of Pleura.—Roentgenograms of Young's case showed a dense shadow outlining the lung, and also the heart, in a lesser degree. The points of interest about the case are: (1) the extent and the diffuseness of the calcification; (2) the absence of any respiratory symptoms at the time of examination, and (3) the absence of any history of respiratory disease.

Cultivation of Spirillum of Rat-Bite Fever.—The reaction of medium found by Joekes to be most suitable for the growth of these spirilla is p_H 7.2 to 7.6. In this connection it should be remembered that the serum slope acts as a potent "regulator" or "buffer." It was found that the reaction of Vervoort's fluid, which is originally p_H 6.6, had altered to p_H 7 to 7.2, after having been warmed for fifteen minutes to 37 C. in contact with the serum slope. From this it is evident that the reaction of Vervoort's medium should not be readjusted to p_H 7.2 before adding it to the serum slope, since, if this was done, it would become too alkaline on incubation. In some of the cultures the spirilla were still found alive and actively motile after three weeks, and it seemed to make little difference whether they were kept at room temperature or at 37 C. Once the primary cultures were obtained, it was just as easy to make subcultures in 1 per cent glucose broth —preferably with the addition of some defibrinated rabbit's blood—as in the original medium. So far Joekes has not succeeded in infecting mice with the cultures, nor has he been able to obtain cultures from infected mice, but only from guinea-pigs.

Monilia in Psoriasis.—Sanders shows that in the skin lesions of psoriasis, and in the mouth and sputum, the streptococcus and the monilia are closely associated; the streptococcus is shown to be the more widely distributed organism, as it was found in the alimentary tract and urine, in the latter situation with *Bacillus coli.*

Okayama Medical Journal, Okayama, Japan

No. 430, 1101-2034 (Nov.) 1925

Action of Pancreatic Lipase. M. Fujihara.—p. 1101.
Milk-Spots, "Taches Laiteuses" in Omentum. Y. Hamazaki.—p. 1109.
Primary Carcinoma of Pancreas. M. Yoshida.—p. 1168.

Practitioner, London

115: 369-432 (Dec.) 1925

Pregnancy and Tuberculosis: Artificial Pneumothorax. T. Oliver.—p. 369.
Surgical Treatment of Constipation. P. Lockhart-Mummery.—p. 380.
Value of Scopolamine-Morphine Narcosis in Labor. G. W. Theobald.—p. 393.
Urinary Calculi. W. K. Irwin.—p. 402.
*Gangrene in Aged. C. Noon.—p. 409.
Vaccines in Chronic and Recurring Catarrh of Respiratory Tract. J. S. Dick.—p. 416.
Treatment of Muscular Wryneck. A. H. Edwards.—p. 420.

Surgical Intervention in Gangrene in Aged.—Noon reports twenty cases of gangrene occurring in aged patients all of whom were subjected to operation. In nineteen cases an amputation was done above the knee on the affected side; in one case an amputation was done below the knee. The oldest patient operated on was 83 years of age; the youngest, 56. Eighteen patients were men and two were women. Eighteen patients recovered; two died. Of eleven patients with capillary thrombosis, ten recovered; of four patients with primary obstruction of a large artery, three recovered; of three with diabetes complicated by gangrene, three recovered; of two with gangrene associated with inflammatory and toxic conditions, two recovered.

Bulletin de l'Académie de Médecine, Paris

94: 1095-1173 (Dec. 8) 1925

Conditions for Competition for Prizes Offered for 1926, 1927, 1928. Biographical Sketch of Dr. R. Lépine. C. Achard.—p. 1127.

Bulletins de la Société Médicale des Hôpitaux, Paris

49: 1483-1520 (Nov. 27) 1925

*The Skin Manifestations of Barbiturism. G. Caussade et al.—p. 1483.
*Hemicrania from Vasodilatation. Pasteur Vallery-Radot and P. Blamoutier.—p. 1488.
Diaphragmatic Hernia. H. Grenet et al.—p. 1493.
*Liver Lesions in Syphilis. Dumitresco-Mante.—p. 1497.
*Dupuytren's Contraction. E. Apert.—p. 1502.
*Lambliasis of the Gallbladder. M. Labbé et al.—p. 1505.
Skin Lesions from Beverages Containing Salicylic Acid. Lortat-Jacob. —p. 1511.
*Asthma and Malaria. C. Mainini.—p. 1514.
*Hypertonic Treatment of Cerebrospinal Hypertension. P. Pagniez. —p. 1518.

Pathogenesis of Skin Lesions from Barbital and Its Compounds.—Caussade, Tardieu and Lejard discuss their case in a woman of 43. A daily dose of 0.20 Gm. of phenobarbital induced chills, lassitude, headache and fever, after eight days, and an eruption resembling measles, with enlargement of glands and pharyngitis, after fourteen days. The clinical picture suggested that a latent infection may have been aroused under the influence of the drug. However, blood cultures were negative, and there was no transmission of the infection to other patients. Such eruptions can usually be reproduced in a person once affected, as has been observed by Woolley, Pasteur Vallery-Radot and Blamoutier. The phenomena seem to contradict Milian's infection theory, supporting rather that of idiosyncrasy or anaphylaxis. On the other hand, the variations of the blood calcium in barbital poisoning are analogous to those in certain cases of asthma, melancholia or Quincke's edema. This may be explained by a disturbance of the vegetative system, similar to that in Laurent's cases of alimentary or drug poisonings associated with sympathicotonia. These eruptions from slight, frequently repeated barbituric acid poisoning may give the clue when the symptoms otherwise suggest paresis, cerebellar disease, epidemic encephalitis or brain tumor.

Headache, with Nasal and Eye Discharge, Limited to One Side.—Pasteur Vallery-Radot and Blamoutier's patient, a woman, aged 35, presented daily paroxysms of headache with lacrimation and a watery discharge from the nose. The phenomena were confined to one side of the head, and were accompanied by different vasomotor changes. The ice test, namely, application of ice to the forehead, or plunging the hand in ice water always relieved the headache in two minutes, all the symptoms completely subsiding in five minutes. Under one subcutaneous injection of 1 mg. of epinephrine the headache and also the nose and eye secretion were arrested in ten to fifteen minutes, not reappearing for twelve or fourteen hours. Intravenous injection of one drop of a 0.1 per cent solution of epinephrine arrested immediately the pathologic phenomena. Twenty drops of the solution, used for a gargle, induced an improvement in a few minutes, the effect being less pronounced than with subcutaneous injection. Administration of epinephrine by the mouth or rectum, or its application to the mucous membrane was without effect. A stream of hot air, applied to the forehead, for about ten minutes, as well as inhalation of amyl nitrite aggravated the headache and the secretions. Evidently the disturbances were due to a vasodilatation of sympathetic origin; thus explaining the efficiency of the vasoconstrictor agents. The patient recovered after twenty subcutaneous injections (each 1 cc.) of the epinephrine solution. The mother and a son of the patient suffered from migraine. A hereditary defect was revealed by a sympathetic syndrome of vasoconstriction in one and of vasodilatation in the others.

Liver Disease in a Syphilitic.—Dumitresco-Mante describes a case in a man, aged 34. In the first phase of the disease there was hypertrophy of the liver, accompanied by a hectic fever, for sixteen months. The second phase was a long remission. The third phase was characterized by Laennec's cirrhosis with ascites. The patient died from superposed tuberculous pleuritis and peritonitis.

Hereditary Contraction of the Palmar Fascia.—Apert reports the observation of a family with Dupuytren's contraction in four generations. It affected only men, and it appeared earlier in each successive generation. None of the patients had been exposed to lead poisoning; thus a hereditary predisposition seemed to be the sole cause. Radium was used in one case; an ampule with the emanation was applied to the palm during five nights. The contraction of the fascia relaxed, leaving only a cord, which does not interfere with the use of the hand.

Lambliasis of the Gallbladder.—In eighty-five intubations of the duodenum, for different affections, Labbé, Nepveux and Gavrila found *Giardia lamblia* in the gallbladder in 8.2 per cent. A rebellious dyspepsia with consecutive malnutrition were the predominant manifestations. The dyspepsia was chiefly of intestinal origin, characterized by an intermittent or permanent diarrhea. Dysentery was revealed in the history of most of the patients, preceding the lambliasis by thirty-seven years in one of them. Later appeared the involvement of the duodenum, or directly of the gallbladder. The different stages of the disease are entailed by the upward moving of *Giardia intestinalis*. In the advanced stage, the parasite may be absent from the stools and be found exclusively in the bile of the gallbladder. No treatment, used to date, has displayed any efficacy.

Asthma and Malaria.—Mainini treated a seemingly essential asthma in a subject with mild malaria. The patient definitely recovered under quinine, while other methods of treatment had failed. The asthma in this case was ascribed to changes of the endocrine glands, especially of the suprarenals, under the action of the plasmodium.

Hypertonic Solutions in Treatment of Cerebrospinal Hypertension.—Pagniez' first case of meningeal hemorrhage was in a man with chronic purpura; the other in a young girl, following an injury to the skull. The phenomena of cerebrospinal hypertension in the man subsided under repeated ingestion of a hypertonic solution of glucose, 40 Gm. in half a glass of water, twice a day or oftener. The same results were obtained in the girl with a concentrated saline solution which had a purgative action. He commends this Weed and McKibben method for general adoption.

Paris Médical

57: 453-492 (Dec. 5) 1925

Therapeutics in 1925. F. Rathery.—p. 453.
*Treatment of Leukemia. E. Sergent and R. Mignot.—p. 468.
Acriflavine in Grave Infections. A. Lemierre.—p. 471.
*Salicylate in Intravenous Injection. Carnot and Blamoutier.—p. 477.
General Anesthesia with Malonyl-Urea Derivatives. P. Fredet.—p. 479.
*Malaria Treatment of General Paralysis. A. Fribourg-Blanc.—p. 484.

Treatment of Myeloid Leukemia.—Sergent and Mignot report a case of myeloid leukemia treated by roentgen rays. After two exposures the general condition notably improved; the spleen became reduced in size, and the blood picture gradually returned to normal. The improvement persisted for ten months; then a recurrence yielded to renewed treatment. Successive recurrences finally failed to respond to the roentgen rays, and the patient died. They cite further some cases in which the rays had induced toxic phenomena from products of cell destruction, or anemia from repeated irradiations, also acute exacerbations of the disease. Deep rays, given at intervals, seem to be most effectual. Besides the spleen, the bone marrow should be exposed also by applying the rays to the sternum, ribs, vertebrae and long bones. In certain cases the patient's life was prolonged by seven or eight years. Large doses of radium applied to the spleen, for two days, have induced marked improvement in a week, and temporary recovery in a month. Two women thus had the blood findings restored to practically normal. Two women with myeloid leukemia treated with radium, became pregnant later, and one gave birth to a full term normal child; in the other case there was premature labor. After radium treatment, patients have survived from two to four years, and even longer. Benzene and thorium may be of benefit when used alone, or supplementary to radium and roentgen ray. Benzene has to be used very cautiously as it may induce toxic by-effects.

Intravenous Injections of Sodium Salicylate.—Carnot and Blamoutier report good results from intravenous injections of sodium salicylate in acute rheumatism and epidemic encephalitis. Small doses of the drug (0.20 or 0.40 Gm. in a 4 per cent solution), given intravenously, induce an effect equal to that from tenfold the dose given by the mouth. It is indicated in rheumatic patients who do not tolerate the salicylate by the mouth or have a failing myocardium. Medium doses (1 or 3 Gm.) may be given to prevent involvement of the endocardium. Doses above 3 Gm. are used with grave complications. In a grave form of epidemic encephalitis from 4 to 6 Gm. of the salicylate was given daily in two or three intravenous injections; from 1 to 4 Gm. in milder forms of the disease. The injections should be continued long after the morbid phenomena have disappeared, and should be periodically repeated. The injections were without action in postencephalitic sequelae. Good results were obtained in four cases of grave epidemic encephalitis, given this injection treatment early.

Malaria Treatment of General Paralysis.—Fribourg-Blanc summarizes the experiences of others and reports three personal cases. One patient died, but the improvement was remarkable in the other two cases. The incubation was ten days in all before the first febrile attack. The malaria was promptly arrested at the proper moment. The fatal case was practically moribund when treated.

Presse Médicale, Paris

33: 1633-1648 (Dec. 12) 1925

*Contraction of the Spleen. P. Pagniez et al.—p. 1633.
*Treatment of Surgical Tuberculosis. A. Finikoff.—p. 1634.

Contractility of the Spleen.—Pagniez, Coste and Escalier's experiments were conducted on chloralosed dogs. An intravenous injection of 0.0005 Gm. of epinephrine was followed after twenty seconds by contraction of the spleen, with reduction of the organ to one third or one fourth its former size. The contraction persisted a few minutes; then the spleen gradually regained its normal size within six or seven minutes. An extract of the posterior lobe of the pituitary (1 cc.) produced a notable contraction of the spleen, but less pronounced than that from epinephrine; with a mixture of epinephrine and pituitary extract the contraction was strong and durable. Intravenous injection of 0.001 Gm. of strychnine, used once, had no effect on the spleen. The contraction appeared to be due to a direct action of the epinephrine on the spleen parenchyma. The number of leukocytes was unchanged in the blood expelled by the contracting spleen, while that of the red corpuscles was greatly increased. Intramuscular injection of 0.001 Gm. of epinephrine in a patient with malaria induced contraction of the spleen in five minutes; the maximal effect in fifteen. The same injection in cases of leukemia or sarcoma of the spleen did not induce contraction of the organ. A mere congestion of the spleen may thus be differentiated from lesions of the parenchyma. Blood cultures were tried in several cases of suspected septicemia, before and half an hour after an injection of epinephrine. No passage of bacilli into the blood could be detected; but imperfect technic may have been responsible for the negative findings.

Treatment of Surgical Tuberculosis.—Some of Finikoff's experiences were summarized recently on page 313.

33: 1649-1664 (Dec. 16) 1925

*Peptone in Treatment of Asthma, Spasmodic Coryza and Hay Fever. Pasteur Vallery-Radot et al.—p. 1649.
*Rest Treatment of Obesity. G. Leven.—p. 1651.
*Ultraviolet Rays in Surgery. F. Masmonteil.—p. 1652.
Modern Theories of Paranoia. M. Nathan.—p. 1653.
Influence of Suggestion on Alopecia Areata. Bonjour.—p. 1659.

Success with Intradermal Injection of Peptone in Treatment of Asthma, Hay-Fever and Spasmodic Coryza.—Reviewed in the Paris Letter.

Treatment of Obesity.—Leven emphasizes that not physical exercise, but bed rest should be prescribed in treatment of obesity, in addition to appropriate diet and respiratory exercises. He trains the patient to make a slight inspiration through the nose, followed by a prolonged expiration, blowing enough to bend the flame of a candle, without blowing it out. These expiratory exercises are possible in the reclining, seated or erect attitude. Series of five successive expirations are repeated every half hour, to a total of from fifteen to twenty in a day. In one among other cases, the loss of weight reached 7 Kg. in twenty days, in another 27 Kg. in the course of eight months. The theory on which this rest-diet-breathing exercises treatment is based, is that irritation of the solar plexus, from overeating or other cause, may disturb the functioning of the cerebral center regulating the destruction of fats.

The Ultraviolet Rays in Surgery.—Masmonteil extols the results from ultraviolet rays in tuberculosis of the peritoneum, glands, cold abscess, fistulas and joint lesions, also in Pott's disease. He declares that recovery occurs in 80 per cent of the patients. No effect was obtained in cases with suppuration. The ray treatment should be combined with calcium, arsenicals, iodid, or injections of oxygen. The rays are also indicated in chronic, nontuberculous inflammations, such as postoperative adhesions, epiploitis, perigastritis or pericholecystitis. The ultraviolet rays appeared beneficial in chronic arthritis, and yielded surprising results in rickets. The rays proved effectual also in sterilization of the field of operation. With this method there were no complications (miliary tuberculosis or meningitis). The rays are also indicated in postoperative treatment of tuberculous lesions with defective healing. In deeply located lesions, the ultraviolet rays may be advantageously combined with roentgen rays; their action may be also increased by the infra-red rays.

Schweizerische medizinische Wochenschrift, Basel

55: 1149-1172 (Dec. 17) 1925

*Venereal Diseases in Basel. P. Vollenweider.—p. 1149.
Treatment of Perforation Peritonitis. W. Isler.—p. 1158.
Diathermy in Gynecology. R. L. Rochat.—p. 1159.
Specialists and Specialties. H. R. Schinz.—p. 1162

Venereal Diseases in Basel.—Vollenweider finds an improvement in the conditions in 1920-1921 as compared with 1881. The main cause is the better use of preventive measures.

Archivio Italiano di Chirurgia, Bologna

14: 225-336 (Sept) 1925

*Pulsating Exophthalmos. B. Baroni.—p. 225.
*Thyroid Tumors in Bones. V. Ferrero and G. Sacerdote.—p. 274.
Internal, Oblique Inguinal Hernia from Clinical Standpoint. G. B. Macaggi.—p. 289.
*Resection of the Liver. M. Fasano.—p. 301.
*Results of Albee Operation on the Spine. D. Giorgacopulo.—p. 305.

Pulsating Exophthalmos.—Baroni adds another to the 345 cases of pulsating exophthalmos he has found on record. A scrap of a shell was responsible for the jugular-carotid aneurysm in his case.

Thyroid Tumors in Bones.—Ferrero and Sacerdote remark that there are only a little over 100 published instances of metastasis in bones from tumors in the thyroid or parathyroids. In certain cases the metastasis was malignant while the primary tumor seemed to be benign, and vice versa. In one of two personal cases, the metastases from the adenocarcinoma of the thyroid were in the humerus and the scapula, and had grown rapidly before the primary tumor had become manifest. The primary small carcinoma in the thyroid was discovered only at necropsy. In the other case, a tumor of parathyroid structure had developed in the femur. The physician was consulted on account of pains in the right thigh, and during his examination the femur fractured. The fracture healed in the normal period. This patient was a woman, aged 65, who for fourteen years had noted a small tumor in the right neck region. One month after the fracture there was metastasis in the right temporal bone. Both metastases seemed to be of benign nature.

Resection of the Liver.—Fasano's patient, a woman, aged 51, seems to be in the best of health now, five years after he resected nearly the whole of Riedel's lobe of the liver, as it was involved in an inflammatory process in and around the gallbladder. He cut out a wedge, 15 cm. at the base. In three other cases he restored the sagging liver to place, thus

correcting stenosis of the duodenum for which the hepatoptosis had been responsible. In a recent cancer case he resected two thirds of the stomach and the involved margin of the liver.

Ultimate Results of the Albee Operation in Spondylitis.—Nineteen cases are described and the end results qualified as "more than satisfactory." It can be said as a general experience that the mortality in the operative cases is less than in others.

Pediatria Archivio, Naples

1: 125-384, 1925

*Cerebral Paralysis in Children. A. De Capite.—p. 125.
*Diphtheria in Children. P. Ritossa.—p. 330.
Complement Fixation in Tuberculosis. L. Consiglio.—p. 353.

Cerebral Paralysis in Children.—De Capite devotes 190 pages to a review of the pathologic symptoms and treatment of paralysis of cerebral origin in children, and adds twenty pages of bibliography.

Diphtheria in Children.—Ritossa finds that the frequency and gravity of diphtheria in Rome have increased in the last two years. Substandard children, especially those with tuberculosis and congenital syphilis, are especially prone to it. Early administration of large amounts of antitoxin and intubation have helped to keep the mortality down to 16 per cent.

Policlinico, Rome

32: 589-632 (Dec. 1) 1925. Medical Section

*The Thymus in Relation to Tetany. G. Macciotta.—p. 589.
Spontaneous Gangrene of the Limbs. E. Venezian.—p. 606.
Foreign Bodies in the Esophagus. A. Stefani.—p. 616.
Disease of the Colon in Cholecystitis. M. La Torre.—p. 622.

The Thymus in Relation to Tetany.—Macciotta removed the thymus in ten young rabbits (five survived) and one dog. No tetany was produced. The alkalinity of the plasma was lowered. The elimination of calcium and magnesium and their concentration in the plasma were increased. Their concentration in the tissues was lowered. Therefore a hypofunction of the thymus may play a rôle in rickets or fragility of bones, while a hyperfunction might be one of the factors in tetany. Removal of the parathyroids in his animals produced fatal tetany.

Riforma Medica, Naples

41: 1157-1180 (Dec. 7) 1925

Cancer and Cholelithiasis. D. Giordano.—p. 1157.
Herpes Zoster and Chickenpox. C. Maderna.—p. 1160.
Extrapleural Thoracoplasty. L. Rieppi.—p. 1163.
Value of Antibodies. A. D'Istria.—p. 1172.
"Antagonism of Superficial and Visceral Arteries." Baroni.—p. 1176.
*Napoleon's Narcolepsy. A. Salmon.—p. 1177.

Napoleon's Narcolepsy.—Salmon describes the grave somnolency from which Napoleon frequently suffered in the last years of his life, and which is said to have been partly responsible for his defeat at Waterloo. Salmon quotes the reports on the obesity and the atrophy of the testes which developed in Napoleon, and agrees with Guthrie in the diagnosis of adiposo-genital dystrophy due to some pituitary lesion. The tendency to somnolency sustains this assumption.

Crónica Médica, Lima

42: 289-320 (Oct.) 1925

The New Loayza Hospital. E. Bello.—p. 290.
*Spirochetal Bronchitis. A. Alvarez López.—p. 295. C'td.
Common Bile Duct Accidentally Cut Across During Cholecystectomy; Immediate Suture; Recovery. C. Villarán.—p. 307.

Spirochetal Bronchitis.—Alvarez López reviews the history of Castellani's spirochetosis, saying that cases have been published in nearly all the Latin American countries. He adds a third case to the two already published in Peru.

Gaceta Médica de Caracas

32: 177-192, 1925

Obliterating Lymphangitis and Cellulitis. R. Freytes Pineda.—p. 177.
Autovaccine in Chronic Tubal Otorrhea. E. Conde Flores.—p. 178.
*Three Cases of Actinomycosis. J. B. Jiménez.—p. 180.
*Spirochetal Bronchitis. A. J. Fernández.—p. 182.

Actinomycosis in Venezuela.—Jiménez describes three cases of actinomycosis of the thorax or jaw. In one chest case the boy died before the nature of the process had been recognized. All had occasion to handle grain and hay.

Spirochetal Bronchitis.—In one of the three cases described, the tubercle bacillus was associated with Castellani's spirochete. Fernández believes that the spirochetosis was the primary disease in this case.

Revista de Cirugía, Buenos Aires

4: 193-240 (Oct.) 1925

*Enchondroma in Long Bones. Sara Satanowsky.—p. 195.
Hydatid Cysts in Muscles and Cellular Tissue. R. Rodriguez Villegas.—p. 211.
*Operative Treatment of Pancreatic Cyst. Alberto Gutiérrez.—p. 223.
Tumor in Umbilicus from Migrating Fishbone. P. Chutro.—p. 231.
Tuberculosis of Mesenteric Glands in Two Children. L. de Goiri.—p. 234.
Partial Scapulectomy for Osteofibroma. P. Jauregui.—p. 238.

Enchondroma of Long Bones.—In the first of the two cases described by Satanowsky there was a history of trauma involving the boy's leg at the age of 4. The enchondroma of the lower third of the femur was excised at the age of 10. In the other case the enchondroma was in the upper third of the tibia of a boy, aged 12, and there was a history of trauma of the region three years before. The enchondroma showed sarcomatous degeneration in this case. The hardness of the tumor and the slow evolution might aid in differentiation from a simple cyst which the roentgenogram might otherwise suggest.

Pancreatic Fistula Consecutive to a Cyst.—Gutiérrez's eight illustrations, some of them in colors, show the cyst between the stomach and the liver, before its removal, and the various steps of implantation of the pedicle in the stomach. The long pedicle of the round cyst originated in the pancreas, and after voiding its contents, the pedicle was fastened to the skin. It secreted profusely, and four months later he cut it away from the skin, and passing slender forceps through the nearest portion of the stomach, he grasped the cut end of the pedicle tube and drew it down into the sagging stomach, and fastened it, thus implanting it in the stomach. Two months after this second operation the patient, a woman of 28, had gained 5 pounds and was free from all disturbances.

Revista Española de Medicina y Cirugía, Barcelona

8: 621-682 (Nov.) 1925

Caustic Injuries of the Esophagus. R. Botey.—p. 621.
*Manifestations of Tuberculosis in the Eyes. Vidal Fraxanet.—p. 628.
Endemic Goiter. J. Salvat Martí.—p. 632.
Therapeutic Anaphylaxis Treatment of Chronic Noncontagious Disease (with Entero-Antigens). D. Moxó.—p. 638.

Tuberculosis of the Eye.—Vidal Fraxanet comments on the unsuspected prevalence of ocular tuberculous lesions. We are now able with the microscope to detect them in their incipiency. He describes the clinical picture in ten typical cases, and the prompt and lasting benefit from tuberculin and general sanatorium treatment.

Revista Médica de Barcelona

4: 329-424 (Oct.) 1925

Necessity for Insistence on Lactation in Maternities. Brossa.—p. 334.
Necessity for Restricting Puncture of the Pouch of Douglas to the True Indications for It. M. Garriga Roca.—p. 340.
Experiences with Sanocrysin at Barcelona. L. Sayé.—p. 344.
*Addition of Hexamethylenamin to Vaccines. E. Alvarez Sainz de Aja.—p. 374.
Recent Advances in Urinary Surgery. D. N. Eisendrath (Chicago).—p. 376.

A Preservative in Gonococcal Vaccines.—Alvarez Sainz de Aja says that the disappointing variability of the action of gonococcus vaccines can be overcome by using a preservative in the vaccine. He confirms the efficacy of hexamethylenamin for this purpose. Vaccines treated with it gave better therapeutic results with less than a quarter of the gonococci in the ordinary vaccine, and in much smaller doses. He is now testing the addition of hexamethylenamin to staphylococcal and other vaccines. He queries whether the hexamethylenamin may not have a specific action of its own, in addition to the preservative action.

Revista Médica del Rosario

15: 181-242 (Aug.) 1925

*Spinal Lymphocytosis in Cardiovascular Disease. C. Alvarez and T. Fracassi.—p. 181.
Melanic Epithelioma with Multiple Metastases. Staffieri and Ruiz.—p. 109.

Lymphocytosis in the Cerebrospinal Fluid in Heart Disease.—In thirty-three patients examined, Alvarez and Fracassi found the lumbar puncture spinal fluid normal in all but four, and these four presented the Argyll Robertson sign, and this sign was not positive in any of the others. The positive cases were all instances of aortitis with aortic insufficiency. Mere inspection of the pupils will answer the desired purpose, without the necessity for lumbar puncture, in such cases.

Revista Médica del Uruguay, Montevideo

28: 193-221 (July) 1925

Sequelae of Epidemic Encephalitis in Children. M. A. Jáureguy.—p. 193.
*Oleothorax in Treatment of Spontaneous Pneumothorax. A. Sarno.—p. 200.

Spontaneous Pneumothorax Treated with Injection of Medicated Oil.—Sarno relates that the outcome has been excellent in one case of tuberculosis of one lung, of a year's standing. Hydropneumothorax had developed, and the dyspnea was intense. About 200 cc. of a medicated oil was then injected and repeated, to a total of 900 cc. of oil in twelve days. The symptoms subsided, and the patient has gained in weight, and feels well. There is still an accumulation of fluid at the base of the collapsed lung with a little air above. In two other cases, both bilateral, the condition was aggravated by the injection of oil, and further treatment was suspended at the fourth and third injection. This treatment seems to be indicated only when the lesions are unilateral and the opening small.

Revista de la Soc. Arg. de Oftalmología, Buenos Aires

1: 25-55 (Oct.) 1925

Case of Hyaline Excrescences in the Eye: Drusen. L. Dodds.—p. 25.
*Detachment of the Choroid. F. Belgeri and Lijo Pavia.—p. 28.
Degeneration of Cornea in Network Form. E. Adrogué.—p. 32.
Extra-Ocular Hernia of the Vitreous Body. Lijo Pavia.—p. 40.
*Diagnosis of Supranuclear Paralysis of the Motor Nerves of the Eyes. E. Adrogué.—p. 49.

False Detachment of the Retina.—Belgeri and Lijo Pavia had diagnosed detachment of the retina in the man, aged 61, but the slit lamp corrected the diagnosis to detachment of the choroid. There were no folds in the protruding portion, and it had seemed stiffer than the detached retina.

Supranuclear Paralysis of the Motor Nerves of the Eyes.—Adrogué has encountered in certain cases of tabes or epidemic encephalitis a paralysis of the external rectus without diplopia or convergent strabismus; convergence is normal, but the outward excursion of the eyeball is much restricted. The lesion responsible for the paralysis seems to be located above the center for the movements of the eyes. The effect is usually felt in only one eye, and in only a single movement of the eye. With the rotation test, only one eye shows the characteristic nystagmus, and only one eye sees objects as if moving.

Revista de la Soc. de Medicina Interna, Buenos Aires

1: 429-461 (Sept.) 1925

*Hemiplegia in Artificial Pneumothorax. M. R. Castex and N. Romano.—p. 433.
Infected Gastric and Duodenal Ulcers. P. Escudero.—p. 439.
*Kidney Function Tests. R. A. Bullrich and A. L. Digiorgio.—p. 449.
*Viscosimetric Index in Pulmonary Tuberculosis. C. Bonorino Udaondo and M. M. Casteigts.—p. 454.
Case of Broncholithiasis. A. A. Raimondi.—p. 458.

Hemiplegia in the Course of Therapeutic Pneumothorax.—At the third filling, the young woman seemed to bear the injection of air without disturbance, the pressure minus 1. When 250 cc. of air had been reached, the pressure jumped to plus 10, and the injection was suspended as she complained of brief pain. A few minutes later there was a convulsion of one side of the body, the head and eyes twisted to the right, and clonic and tonic spasms in the right arm and leg, passing into complete hemiplegia. Beginning the twenty-fourth hour, the hemiplegia gradually subsided. The facial paralysis was the last symptom to disappear, traces of it being still perceptible two weeks later. Castex and Romano ascribe the mishap to gas embolism, and the favorable outcome to the fact that the gas happened to be air.

Kidney Function Tests.—Bullrich and Digiorgio combined the Volhard diuresis test with the phenolsulphonphthalein test, injecting the stain as the patient began to drink the 1,500 cc. of water or warm infusion. The findings in eighteen cases showed a remarkable parallelism; both tests seem to involve the circulation in the kidney. The association of the two tests is more interesting than either alone, although they seem to have the same biologic import.

The Viscosimetric Index in Pulmonary Tuberculosis.—In fifteen normal subjects, the Hess viscosimeter showed the viscosity quotient to average 2.1, the range being from 1.7 to 2.5. In fifteen patients with mild pulmonary tuberculosis, the index ranged from 2.1 to 3.1, averaging 2.6. In forty-nine with advanced tuberculosis, the average was 4.1.

Deutsche medizinische Wochenschrift, Berlin

51: 2059-2100 (Dec. 11) 1925

Hypertension. P. Fleischmann.—p. 2059. C'td.
*So-Called Traumatic Neuroses. E. Stier.—p. 2062. C'cn.
*Polyneuritis After Wound Diphtheria. Reinhold.—p. 2064.
*Liver—Syphilis—Arsphenamine. W. B. Meyer.—p. 2066. C'cn.
Action of Irritants on the Skin. R. Stahl.—p. 2069.
Meningitis, Tubercle and Paralysis Agitans. H. Deist.—p. 2070.
Treatment of Pulmonary Tuberculosis. B. Fujimoto.—p. 2072.
Fracture of Styloid Process. K. Specht.—p. 2074.
Scarlatinal Lymphangitis. W. M. Werzblowsky.—p. 2075.
Syphilis and the Cerebrospinal Fluid. H. Förtig.—p. 2076.
Pepsin Secretion. P. Hirsch-Mamroth.—p. 2078.
Pupils and Cataract in Tetany. Eugen von Rutich.—p. 2079.
Pure Light Lamp. W. Taschenberg.—p. 2081.
Blood Transfusion in Surgery. H. Wildegans.—p. 2081.
Occupational Hygiene. R. Müller.—p. 2083. C'cn.
Comment on the Decision of the Berlin Medical Faculty in Retaliation for the Exclusion of German Scientists from Entente-International Gatherings. J. Schwalbe.—p. 2086. See News item, p. 209.

So-Called Traumatic Neuroses.—Stier examined fifty telephone operators who were receiving a pension or yearly allowance for traumatic neurosis due to alleged injuries by the telephone current. His advice was to discontinue every allowance—and forty-seven of them submitted to this without any attempts to modify the decision to this effect. It is interesting to draw a parallel between the sequels of injury in insured persons and in those who cannot derive any advantage from the traumatism. A strict and expert examination of such individuals, and especially of the shellshock cases who want to keep on drawing advantage from it even after the war, together with fair (not lenient) court decisions not only realizes great savings of public and private funds but also raises the level of public morals.

Polyneuritis After Wound Diphtheria.—Reinhold's patient was infected with diphtheria localized in the wound after cholecystectomy. She developed paresis of accommodation and of the uvula three weeks later. This shows that the latter paralysis is not due to the usual localization of the diphtheria.

Liver—Syphilis—Arsphenamine.—Meyer attributes the grave affections of the liver, observed during treatment for syphilis, exclusively to the disease. Arsphenamine is not dangerous and is directly indicated in these cases.

Klinische Wochenschrift, Berlin

4: 2377-2424 (Dec. 10) 1925

Percussion of the Aorta. H. Elias.—p. 2377.
*Vitamin Content of Human Milk. L. F. Meyer and E. Nassau.—p. 2380.
*Isohemagglutination. G. H. Schneider.—p. 2383.
Oligodynamic Action. J. Voigt.—p. 2387.
*Alkaptonuria. H. Baar and P. Freud.—p. 2388.
*Significance of Vitamin A Group. G. von Wendt.—p. 2389.
Ultraviolet Rays and Gastric Secretion. P. Keller and M. Loeb.—p. 2390.
*Treatment of Septic Diseases. R. Stahl and H. Nagell.—p. 2392.
*The Skin in Diabetes. E. Jürgensen and K. H. v. Noorden, Jr.—p. 2395.
*Metabolism of Cancer Cells. O. Warburg.—p. 2396.
Active Immunization Against Diphtheria. Opitz.—p. 2397. Reply. Kochmann.—p. 2397.
*Pituitary Hormone in the Cisterna. J. Jánossy and B. Horváth.—p. 2397.
Surface Tension. D. Adlersberg and O. Sternberg.—p. 2398.
Source of Error in Wassermann Reaction. E. Pieper.—p. 2399.
*Levulose Diabetes. S. Steinberg and W. Elberg.—p. 2399.
Inexpensive Treatment of Epilepsy. W. Weygandt.—p. 2400.

Postgraduate Training in Occupational Diseases. B. Chajes.—p. 2404.
Social Problems of Psychotherapy. W. Eliasberg.—p. 2407.
Liver Function Test. H. Kähler.—p. 2421.

Vitamin Content of Human Milk.—Meyer and Nassau repeated Frank's experiments on feeding young guinea-pigs with oats and woman's milk. While confirming the fact that the animals die under this diet, they saw no indication whatever of scurvy in them. When investigating the cause of death, they found that the amount of proteins they administered with the human milk was too small for the requirements of the rapidly growing guinea-pigs. Guinea-pig milk contains threefold more proteins than human milk. Addition of a protein to the diet prevented the death of the guinea-pigs. Consequently, woman's milk contains a sufficient amount of vitamin C.

Isohemagglutination.—Supplementary to some statistical studies, Schneider determined the blood groups in 198 mothers and children. The groups were identical in 112 instances (60 per cent). No case of eclampsia was encountered among those with this congruence of the blood group. Among the eighty-two cases with different blood groups, there were seven cases of eclampsia.

Alkaptonuria.—Baar and Freud injected serum or milk in an infant, 10 months old, with alkaptonuria. The excretion of homogentisic acid dropped after every injection.

Significance of Vitamin A Group.—Wendt measured and weighed 15,000 children between the ages of 11 and 16 in Finland. He found the greatest increase in length between June and September; the least from February to May, inclusive. The maximum increase in weight occurred from October till January; the lowest from February till May. He discusses the possible relation to the vitamin content of the food and to sunlight.

Treatment of Septic Diseases.—Stahl and Nagell prepared autogenous vaccines from a few patients with chronic infectious endocarditis. They injected these autovaccines partly in the patient, partly in healthy subjects, and used their serum for treatment. They obtained remissions resembling actual cures in three of the five cases.

The Skin in Diabetes.—Jürgensen and von Noorden, Jr., observed in diabetes patients an acceleration of the capillary circulation for four to six hours after injections of insulin. After this the capillaries dilate and the blood stream slows up. The sweat glands seem to be excitable in the early stages of diabetes, and depressed in the later.

Metabolism of Cancer Cells.—Warburg points out that Bauer and Nyiri's failure to obtain glycolysis with human cancer cells was probably due to the low concentration of bicarbonate they used.

Pituitary Hormone in the Cisterna.—Jánossy and Horváth found that the cerebrospinal fluid obtained by cisterna puncture—even when diluted six times—always induced contractions of the virginal rat uterus. The fluid obtained by lumbar puncture had a much weaker action, if any. They consider this another proof of the presence of pituitary secretion in the cerebrospinal fluid.

Levulose Diabetes and Fructogen Formation.—Steinberg and Elberg observed levulosuria in two sisters and a brother. Diabetes had been frequent in the three preceding generations. The glucose tolerance was good; injection of epinephrine produced neither glycosuria nor levulosuria; injection of phlorhizin, only glycosuria. The blood gave a distinct levulose reaction after ingestion of cane sugar. The authors believe that the main disturbance is in the fructogen-forming property of the liver (glycogen formation from levulose). The patients are able to work, and have practically no complaints due to the disease.

Medizinische Klinik, Berlin

21: 1869-1908 (Dec. 11) 1925

*Syphilis and Plastic Linitis. H. Strauss.—p. 1869.
Metastasis of Goiter. Dreesmann.—p. 1871.
*Postvaccination Encephalitis. R. Kraus and J. Takaki.—p. 1872.
Food Poisoning by the Proteus. P. Wichels and W. Barner.—p. 1880.
The Blood After Burns. K. Schreiner and O. Pucsko.—p. 1882. C'td.
Avian Tuberculosis in Man. I. Deutsch.—p. 1884.
Kidney Cyst Simulating Peritonitis. Istvan von Gönczy.—p. 1885.
Autochthonous Tropical Malaria. L. Winkler.—p. 1886.
Serodiagnosis of Pregnancy. H. Munter and E. Gräfenberg.—p. 1889.
Hemolytic Colon Bacilli in the Intestines. R. Klingenstein.—p. 1891.
Irradiation Treatment of Enlarged Glands. H. Holfelder.—p. 1895. C'tn.

Syphilis and Plastic Linitis.—Strauss finds that syphilis of the stomach is rare. Yet it is so important that he advises treatment in every case of diagnosed tumor with the slightest possibility of a syphilitic origin. The Wassermann test was negative in his case in which the success of specific treatment confirmed the nature of the disease as a tumor-forming syphilitic disease of the stomach. The main thing is to "start wondering in time."

Postvaccination Encephalitis.—Kraus and Takaki's experiments proved that the encephalitis observed recently after vaccination against smallpox is not due to the vaccine. It is possible, however, that the vaccination activates the latent virus. The use of small doses of killed vaccine virus (subcutaneously or intracutaneously) might prevent such complications.

Münchener medizinische Wochenschrift, Munich

72: 2133-2176 (Dec. 11) 1925

*Means to Soften Scar Tissue. W. Stoeltzner.—p. 2133.
*Idem. W. Stoye.—p. 2135.
*Manoilow's Sex Hormone. W. J. Popow.—p. 2139.
Heterotopic Fibro-Adenomatosis. H. Steichele.—p. 2141.
Xanthoprotein Reaction. Lemesic and Jovanovic.—p. 2142.
Psychogenic Incontinence. K. Ochsenius.—p. 2143.
Lipoids in Children. H. Much.—p. 2143.
Aortic Regurgitation from Congenital Syphilis. T. Hausmann.—p. 2147.
*Typhoid Cholecystitis. H. Schottmüller and E. Fraenkel.—p. 2150.
*Embolism in Striate Body. Schwartz and Goldstein.—p. 2154.
Functional Angina Pectoris. H. Kohn.—p. 2155.
*Mites in Feces. E. Hieronymi.—p. 2157.
Palatable and Digestible Food. F. Crämer.—p. 2157.

Means to Soften Scar Tissue.—Stoeltzner tested the softening action of various substances, including thiosinamine, rhodanides, potassium and choline on pieces of dura tissue. The best results were obtained with concentrated solutions of urea. They gave also good clinical results when injected under nonadherent scars. Stoye reports on his clinical experience. Injections of a few cubic centimeters of a concentrated solution of urea softened all the loose scars. They induced necrosis when the scar was adherent.

Manoilow's Sex Hormone.—Popow states that he had only 11 per cent incorrect results with Manoilow's sex test in seventy-one normal subjects. The percentage of failures was 35 in endocrine derangement. The blood of women with exophthalmic goiter gave a "male" reaction. This indicates that the stronger oxidative processes in the male might account for the normal results.

Typhoid Cholecystitis.—Schottmüller and Fraenkel discuss the clinical, pathologic and epidemiologic aspects of cholecystitis due to typhoid bacilli. The indications for cholecystectomy are the same as with any other etiology. The majority of typhoid carriers eliminate the bacilli by the intrahepatic biliary ducts—not by way of the gallbladder. Therefore the extirpation of the latter is unnecessary if the only indication for it is the fact that the subject is a bacilli carrier.

Embolism in Striate Body.—Schwartz and Goldstein observed in the last two years twelve cases of hemorrhages affecting electively the striate body—most of them its anterior upper part. The internal and external capsules were intact. The hemorrhages followed embolism—usually due to endocarditis.

Mites in Feces.—Hieronymi found with Kunze that *Tyroglyphus farinae* is innocuous for dogs. The gastric juice kills it very quickly. He believes that the same holds true for the occasional findings of the dead parasites in human stools.

Wiener klinische Wochenschrift, Vienna

38: 1349-1372 (Dec. 17) 1925

*The "Surgically Incurable" Ulcer. F. Mandl.—p. 1349.
Rupture of the Epigastric Artery. K. Blond.—p. 1352.
*Treatment of Lymphadenosis. S. Peschić.—p. 1354.
Alimentary Leukocytosis in Infectious Diseases. A. v. Torday.—p. 1356.
*Spasmodic Cough with Failing Heart. R. Wertheimer.—p. 1358.
Septic Infarction of the Lungs. K. Herman.—p. 1360.
Albuminuria. J. Donath. Supplement.—pp. 1-16.

The "Surgically Incurable" Ulcer.—Mandl points out that in rare instances the postoperative jejunal ulcer will recur in spite of radical measures. He applies to this condition the term "surgically incurable ulcer." He emphasizes by this only the prognosis.

Treatment of Lymphadenosis.—Peschić had surprisingly good results in eight cases of various enlargements of lymph nodes. His treatment consisted in a light diet and two or more doses of 0.15 Gm. of calomel daily. There was suspicion of syphilis in his opinion only in one case.

Spasmodic Cough with Failing Heart. — Wertheimer observed attacks of cough, connected sometimes with a sensation of a foreign body in the larynx, in a few patients who showed soon afterward distinct signs of insufficiency of the heart. He attributes these attacks to nervous projections of changes in the tonus of the heart muscle.

Zentralblatt für Chirurgie, Leipzig

52: 2865-2928 (Dec. 19) 1925

Penile Dislocation of the Testis. W. Kausch.—p. 2866.
Illumination of Operating Room. L. Drüner.—p. 2869.
*Shenton's Line. C. Renner.—p. 2875.
*Retrogression of Malignant Tumors. F. Erkes.—p. 2877.
Calcification of the Pleura. P. Esau.—p. 2878.
*"Transplantation of Blood Vessels." A. Zabludowski.—p. 2882.

Shenton's Line.—Renner demonstrates the usefulness of Shenton's line, connecting in roentgenograms the lower margin of the neck of the femur with the upper margin of the obturator foramen, the whole forming an arc. The line appears broken in upward dislocation of the hip joint.

Retrogression of Malignant Tumors.—Erkes made gastroenterostomy in a patient suffering from a large inoperable tumor of the stomach. Histologic examination of an extirpated lymph node revealed cancer. The patient recovered completely. The region was reinspected four years later, when a supravaginal amputation of the myomatous uterus became necessary.

"Transplantation of Blood Vessels."—Weglowski reported in number 40 of this *Zentralblatt* on forty-seven successful transplantations of veins among fifty-one he alleged to have made. He mentioned besides this that he had written a series of articles on the subject in the Russian and Polish languages. Zabludowski states that this author has not published anything on the subject in Russian literature, and that on account of the deplorable results of most of his interventions during his work in Moscow, he had been forced to discontinue them.

Zentralblatt für Gynäkologie, Leipzig

49: 2865-2928 (Dec. 19) 1925

Mechanism of Torsion of Organs. O. Lindig.—p. 2876.
*Sequels of Eclampsia in Mothers and Children. R. Bund.—p. 2879.
*Blood Groups in Mothers and Children. V. Ohnesorge.—p. 2884.
Unilateral Hematometra. A. Sohn.—p. 2890.
"Changes in Vaginal Acidity." H. Gänsslе.—p. 2893.
Ectopic Decidua in the Cervix. M. Samuel.—p. 2893.
Serum Stability in Gynecology. A. v. Probstner.—p. 2894.
Chorea of Pregnancy. C. Jakoby.—p. 2897.
Perforation of Abscess in Labor. P. Braun.—p. 2905.
Extra-Uterine Pregnancy. A. Kuncz.—p. 2907.
Manual Removal of Placenta. M. S. Naiditsch.—p. 2916.

Sequels of Eclampsia in Mothers and Children.—Bund surveys material consisting of seventy-six women with one or more attacks of eclampsia. He rates the probability of its recurrence in a subsequent pregnancy at 20 per cent. Chronic nephritis developed later in 10 per cent and epilepsy in 4 per cent of the women. Thirteen per cent of the children died in the first few weeks. Later than this, the prognosis for the child is good.

Blood Groups in Mothers and Children.—Ohnesorge's data include 302 pregnant women and 250 children (including nine pairs of twins). The congruence or incompatibility in the blood groups in mother and child seems to have no connection with the development or sex of the child nor with the toxicoses of pregnancy. He tested the corpuscles from ten fetuses of the fourth to the sixth month. There was no agglutination in seven cases. Two fetuses of the fourth and one of the fifth month belonged to group II.

Zentralblatt für innere Medizin, Leipzig

46: 1217-1232 (Dec. 19) 1925

Action of Injections on the Blood Pressure. F. Doenecke.—p. 1217.

Grèce Médicale, Athens

27: 33-40 (Oct.) 1925

Terrien's Peripheral Ectasia of the Cornea. A. Trantas.—p. 33.
*Acute Postoperative Spastic Ileus. T. Astériadès.—p. 37.

Acute Postoperative Spastic Ileus and Its Treatment by Intraspinal Anesthesia.—Summarized in these columns, Dec. 19, 1925, p. 1999, when published elsewhere.

Prophylaktitcheskaia Medicina, Kharkov

4: 1-204 (Nov.) 1925. Partial Index

Experimental Pathology of Smallpox Vaccine. I. Gakh.—p. 5.
*Immunization Against Diphtheria. M. Gluzman.—p. 15.
*Cultivation of the Diphtheria Bacillus. Y. Tchebotareva.—p. 22.
*Convalescent Serum in Prophylaxis of Scarlet Fever. A. Skrotzky and M. Bardakh.—p. 28.

Active Immunization Against Diphtheria.—Gluzman experimented on twenty-nine guinea-pigs with mixtures of diphtheria toxin with antitoxin. There was evidence that only a mixture, in which not quite all of the diphtheria toxin was neutralized by the antitoxin, induced active immunization against several lethal doses of toxin, or virulent diphtheria cultures. The development of the immunity did not depend on the number of injections, but on the proportions of the toxin and antitoxin in the mixture. A mixture was considered effectual and well tolerated when a dose of 1 cc. did not cause local or general phenomena, nor tardy paralysis, in guinea-pigs. A dose of 5 c.c. of this mixture caused marked infiltration in them. This mixture was used in ninety-nine children, from 2 to 15 years old, with a positive Schick test. The first injection contained 0.5 c.c. of the mixture; the second, given eight to fourteen days later, 0.5 or 1 cc. Except in three, the reaction was only local; it disappeared on the third day. Schick control tests, applied after three or four months in sixty-five thus inoculated, were negative in all but four. Gluzman emphasizes that only this hyponeutral mixture gave positive results, while those from neutral or hyperneutral mixtures were negative.

Comparative Value of Culture Mediums for the Diphtheria Bacillus.—Tchebotareva's research on seven culture mediums used for cultivation of the diphtheria bacillus, showed that Klein's medium may be considered as the most satisfactory. It is absolutely sterile; transparent; nutritive enough for the growth of the bacillus, and possesses an elective property for the diphtheria bacillus, thus allowing its isolation. To 9 parts of the serum is added 1 part of a 15 per cent solution of sodium hydroxid. It is neutralized with hydrochloric acid and mixed with 4 parts of agar. In eighteen positive cases with the Löffler culture medium, the findings with the Klein culture medium harmonized in all but two.

Convalescents' Serum in Prophylaxis of Scarlet Fever.—Skrotzky and Bardakh believe that the serum from scarlet fever convalescents may be the most efficient method for immunization against scarlet fever. They used the serum from convalescents, aged from 6 to 15 years, on the fifth or sixth week of the disease or on the fourth week in cases with uremia. To each 20 cc. of the serum was added 0.5 or 1 cc. of chloroform, or 1 cc. of a 5 per cent solution of phenol. Usually two or three serums were mixed. The injections were made in the gluteus muscle, 10 cc. up to the age of 12, and 12 or 15 cc. up to 15 years. Ninety-four children, in contact with scarlet fever patients, were inoculated. None except two injected at the end of the incubation period, contracted the disease, and these in a mild form. Every district, they say, should have arrangements for obtaining scarlet fever serum for prophylactic purposes.

Finska Läkaresällskapets Handlingar, Helsingfors

67: 929-1039 (Nov.) 1925

*Endocrine Derangement in Congenital Syphilis. A. Cedercreutz.—p. 929.
*Prognosis with Hypertension. R. Ehrström.—p. 939.
*Study of Case of Recurring Urticaria. K. Lindberg.—p. 943.
Sedimentation Test in Pulmonary Tuberculosis with Artificial Pneumothorax. R. Gripenberg.—p. 974.

*The Metabolism During Dancing. G. Grönholm et al.—p. 985.
*Treatment of Postoperative Retention of Urine. S. Hjelt.—p. 990.
Race Biology and Race Hygiene as a Current Tendency of Science and Civilization. L. Ringbom.—p. 1000.
Case of Incarcerated Hernia. L. Gratschoff.—p. 1015.

Endocrine Disturbances in Congenital Syphilis.—Cedercreutz' article was briefly mentioned in these columns, Dec. 26, 1925, p. 2059. He emphasizes that organotherapy in time might ward off serious disturbances. He has combined thyroid treatment with arsphenamines or bismuth in a number of cases of parenchymatous keratitis, and the affection has subsided much more promptly and completely than under any other treatment. One patient with unilateral keratitis—under observation for four years—recovered under this combined treatment and the other eye escaped entirely. The deafness in congenital syphilis suggests involuntarily the deafness of cretins. Treatment of established Hutchinson labyrinthitis has little hope of benefit, but thyroid treatment in its incipiency or in prophylaxis might give good results in congenital syphilis. He advises it particularly with unilateral deafness in such cases.

Prognosis of Hypertension.—Ehrström has recently reexamined 300 patients with hypertension analyzed in 1918. In one group of twenty patients under observation for ten to sixteen years, the blood pressure has been constantly or with brief exceptions above 200 mm. of mercury, but they felt and looked well and were able to work most of the time. When hypertension begins at 50 and lasts for twenty years, the patient has already surpassed the average of life expectancy. The chances are about even as to whether a high blood pressure means a shortening of life or not. Even with heart disease, unexpected remissions or long tolerance are frequent. A history of syphilis tends to reduce the life expectancy with hypertension, but, on the whole, the fact that a patient has hypertension does not justify us in frightening him merely on account of the high blood pressure.

Research on Purine Metabolism.—The subject of Lindberg's experiments was a young man who for four years had been subject to recurring urticaria with fleeting edema. The metabolism was studied for sixty-seven days. On a purine-free diet for twenty-six days, the urticaria and edema subsided almost completely, while both flared up gravely anew when nucleic acid was given. The uric acid content of blood and urine was within normal range but the output in the urine was very much increased after ingestion of 10 Gm. of nucleic acid; a lesser increase was noted when alcohol had been taken, but alcohol alone did not seem to influence the elimination of uric acid, and the influence of epinephrine was conflicting. Calcium chloride reduced the output of uric acid.

The Metabolism in Dancing.—The metabolic findings with fifteen or thirty minutes of the waltz, the shimmy, the fox trot, the polka and mazurka were recorded at the Physiology Institute at Helsingfors. With the first two dances mentioned, the metabolism increased fourfold, and with the last two almost tenfold over the metabolism at rest. The exact figures are tabulated, and are compared with the metabolism findings with other forms of exercise. Even the least strenuous of these dances yielded 3.99 calories per kilogram-hour, while gymnastic exercises, according to Ling, yielded only 2 calories. Running, with 160 steps per minute, yielded 9.7 calories (Rancken) while the findings with the polka and mazurka were 10.87. The dancing was done in a confined space, without music, the time beat given by an electric apparatus. The findings, therefore, are probably minimal.

Postoperative Retention of Urine.—Hjelt relates that intravenous injection of 40 per cent solution of hexamine in 125 cases failed to elicit the desired response on the part of the bladder in only 8 per cent. The dose should never be more than 3 cc. and even with this spasm of the bladder or hematuria may be observed. Severe spasm persisting for hours occurred in five cases and hematuria in three. The hematuria persisted for a week in one. The urine was sterile in all in this group. The hexamine should not be given unless all other methods have failed and catheterization is impracticable, but it seems to be dependable then, and the disinfecting action is a further advantage in the experiences described.

Hospitalstidende, Copenhagen

68: 985-1000 (Oct. 29) 1925
*Subacute Inguinal Lymphogranulomatosis. A. Kristjansen.—p. 985. C'en.

Subacute Inguinal Lymphogranulomatosis.—Kristjansen's conclusion from his analysis of the literature and personally observed cases is that this affection is an actual morbid entity, distinct from chancroid and similar lesions, but probably identical with the so-called climatic bubo.

68: 1001-1016 (Nov. 5) 1925
*Roentgen-Ray Treatment of Eczema. S. Lomholt.—p. 1001.
Imbecility as Indication for Tubal Sterilization. Petersen.—p. 1011.

68: 1017-1032 (Nov. 12) 1925
Anomalies in the Ureter Mouths. E. Holm.—p. 1017.
Cerebral Hemorrhage in Eclampsia. S. A. Gammeltoft.—p. 1025. C'td.

Roentgen-Ray Treatment of Eczema.—Lomholt relates that irradiation with roentgen rays at the Finsen Light Institute at Copenhagen failed to display any actual curative action but it had a very welcome symptomatic effect. It banished the pruritus, and the peace thus obtained gave the eczema a chance to heal under local measures. The effect was only symptomatic and did not last more than six or seven weeks in their 168 cases. Permanent recovery was observed in only fifty-eight; there was recurrence or renewed flaring up of the eczema in all the others. The scratching on account of the itching serves to maintain the eczema, hence the importance of the relief from the pruritus even if only for a few weeks. As there can be no hope of curing the affection with the rays, the irradiation should be mild and with ample intervals, to avert all possible danger.

Svenska Läkaresällskapets Handlingar, Stockholm

51: 159-206 (Nov. 15) 1925
*Korsakoff's Disease. H. Marcus.—p. 159.
Natural Anastomosis Between Splenic and Jejunal Arteries. A. Lennér.—p. 181.
*Diabetes and Insulin. F. G. Banting.—p. 189.
*Methods of Studying the Nervous System. R. Lorente De Nó.—p. 201.

Korsakoff's Disease.—Marcus remarks that the essential element in the autointoxication responsible for this disease is still a mystery, as also why it attacks only hard drinkers. He describes with minute detail nine cases in this instalment of his article.

Diabetes and Insulin.—This is the lecture delivered (in English) at Stockholm, Sept. 15, 1925, when Banting and Macleod were presented with the 1923 Nobel prize in medicine.

Modern Methods of Research on the Nervous System.—De Nó points out special sources of error in studying the nervous system. He specifies Ingvar's article "The Phylogenesis of the Interbrain" as based on mistaken premises.

Ugeskrift for Læger, Copenhagen

87: 1049-1072 (Nov. 26) 1925
*Menacing Obstetric Hemorrhage. P. Morville.—p. 1049.
G. Fracastoro, Physician and Poet, 1478-1533. J. W. S. Johnsson.—p. 1051.
*Epidemic Encephalitis from Psychiatric Standpoint. Winther.—p. 1055
"Tuberculin in Treatment of Asthma." A. H. Johansen.—p. 1056.

Grave Obstetric Hemorrhages.—In Morville's forty-seven cases of severe hemorrhage among 20,371 parturients, twenty-two died. These were mostly elderly multiparas with more or less pathologic labor. Seventeen died in the twenty-six cases in which the placenta was expelled immediately after the birth of the child, but only three of the eighteen in which there had been an interval of five minutes or more. Intrauterine tamponade failed in all but two of the fourteen thus treated. Bimanual compression is usually required in addition.

Epidemic Encephalitis in Relation to Mental Disease.—Winther urges the necessity for some institution where children who have had epidemic encephalitis can get the disciplining and training they require. The records of the psychiatric service at Copenhagen, 1911 to 1919, show no instance in a child of mental disease that had been preceded by a sickness suggesting epidemic encephalitis, but since then there have been seven cases. They are sent from one institution to another, as they do not fit into the present plan of any, but they urgently need the proper care.